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POPULAR PHOTOGRAPHY

WORLD'S LEADING PHOTOGRAPHIC MAGAZINE

OCTOBER, 1955
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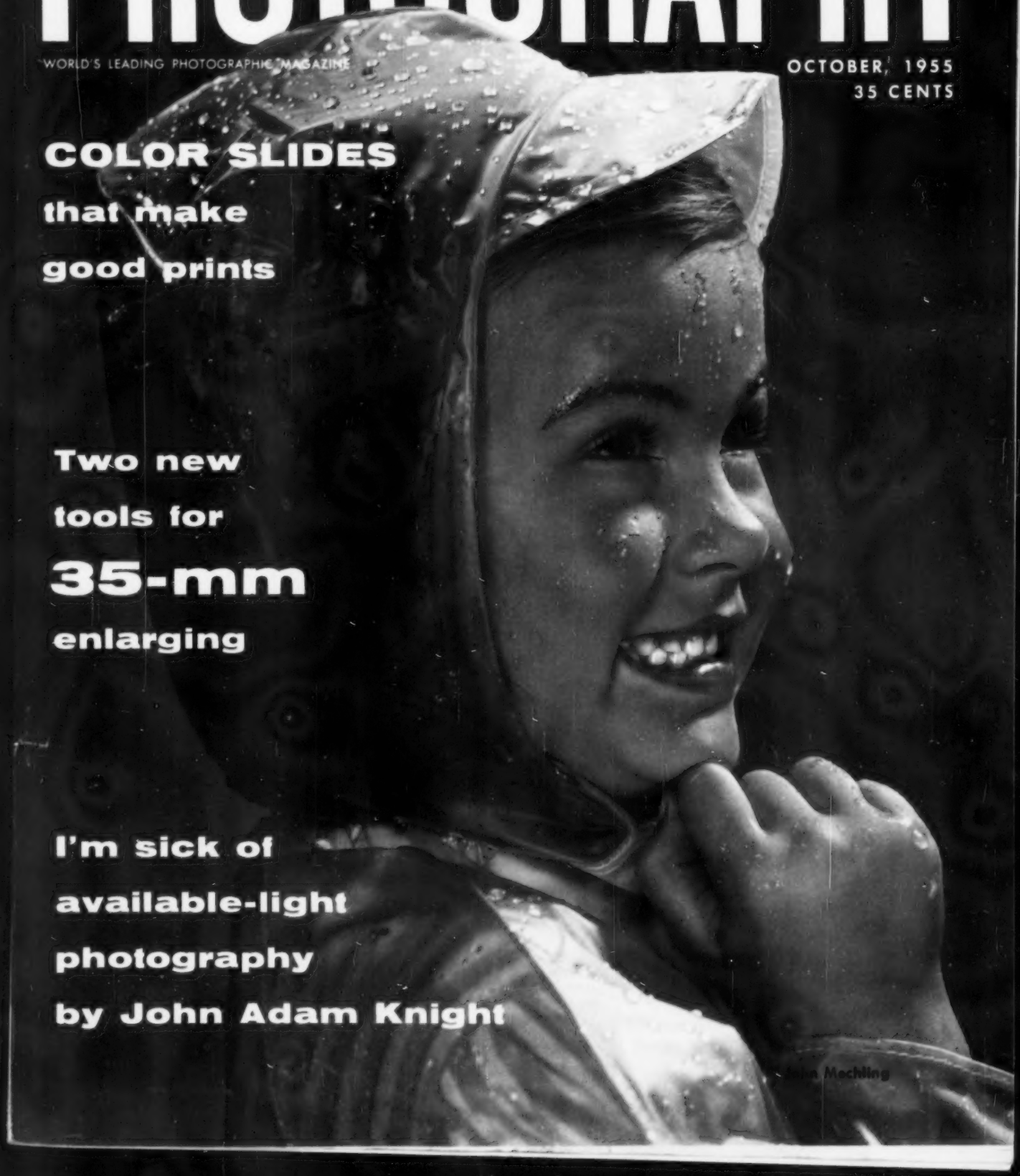

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I'm sick of available-light photography by John Adam Knight

John Mechling

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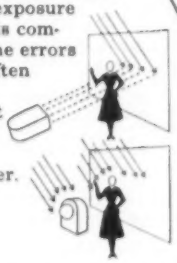

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OCTOBER 1955

VOLUME 37 NUMBER 4

POPULAR PHOTOGRAPHY

including CAMERA and AMERICAN PHOTOGRAPHY

WORLD'S LEADING PHOTOGRAPHIC MAGAZINE

Californian John Mechling's cover photograph of Jennifer Dorman in a Laguna Beach rain was made with a custom-made 8x10 camera and a 640-mm APO-Tessar f/9 lens. The long focal length was a good choice for a portrait, and the highly corrected apochromatic design ideal for color. Exposure on Ektachrome B was 1/25 sec at f/24, using eight #22 flashlamps and the appropriate 81C (light-balancing) filter.

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letters to the editor

A Hassle Down Under

Enclosed you will find a photo of a ticket for the Olympic Games 1956 in Melbourne, Australia. The printed prohibition (*a section of which is reproduced below*) on the back of the ticket of the taking of pictures is contrary to the international efforts to make the great occasion of the Olympic Games also a photographic festi-

> authorized by the Organising Committee;
>
> (*b*) the purchaser shall not take any photographs or cinematograph pictures of any kind;

Wot, no pictures at the Olympics?

val for all. The Photographic Merchant Association of Australia does not agree with this restriction; we feel that photography during the Games should not be limited to commercial purposes, and that every amateur should have the opportunity of picture-taking during the Games from his seat in the stands.

WALTER SCHUTZ-REUTER
Melbourne, Australia

Optical Glass Filters for Color

In your August article *Filters for Color* there were a number of comments regarding filters which were factually incorrect. On page 106, the statement "There aren't many filters for color shooting that are available as solid optical glass . . ." just isn't so! For many years the EdnaLite Optical Co., Inc., has been manufacturing and selling a broad range of high-quality one-piece solid optical-glass filters for such diversified users as the Army Signal Corps, the Navy, Science and Industry, as well as similar filters for amateur and professional photographers. At present there are an unlimited number of different types of solid optical-glass filters manufactured by EdnaLite available at photographic stores throughout this country and the rest of the world. These filters are competitive in price with fragile laminated filters and have the necessary characteristics to withstand the many inherent weaknesses of the laminated type of filter, such as resistance to moisture, shockproof characteristics and *hard* surface coating.

The second comment to which we take exception in this article is the remark that "If you use a filter a great deal, especially in sunlight, then replace it frequently." EdnaLite filters cannot possibly change characteristics in sunlight because of the inherent stability of glass colored in the molten mass, at extremely high temperatures. There are no dyes or gelatin to be affected by sunlight.

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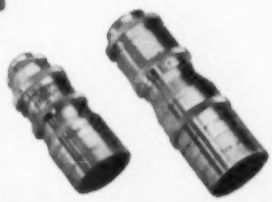

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these comments to your readers' attention since we feel this article was written without suitable background information as to the properties of EdnaLite's "Lifetime-Guaranteed" filters.

ROBERT H. REIBEL
The EdnaLite Optical Co., Inc.
Peeksill, N. Y.

A Little Room, Please . . .

Why doesn't someone wise up the newspaper photogs? They seem to fall in the same category as the golfer who totals his score on the green!

This tirade comes after a day of trying to get some shots of a reviewing stand at a parade, while they gather in front of same like a flock of sheep, blocking the color of the stand and faces of important people. Seems like some of the business of getting the five editorial "w"s could be transacted clear of the front area so that some of the novices could get a few shots without all the clutter in the foreground.

WALT PRICE
Newport, R. I.

Portraiture of the Young

I'm so fond of this picture of my youngest (age three) that I thought I'd send it

A child in a natural light

on to you. I took it with a Canon 35-mm camera—with Tri-X, 1/100 sec at *f*/2, by available light.

KIRK WILKINSON
New York, N. Y.

We Meant to Say . . .

I noticed that the photograph on page 81 of the August issue is credited to "Thomas Hollyman, Standard Oil." This same picture appeared as the lead photograph in the book *The Oilmen*, published by Rinehart & Co., 1952; mention is made in the book that the photographs were by Mr. Hollyman, made with the co-operation of the Shell Oil Company. In view of this, I wonder whether you meant Standard Oil or Shell Oil?

H. C. BURKHOLDER
Chicago, Ill.

• *Thanks for putting it so gently—it was indeed the Shell Oil Company through whom we received the picture.*—ED.

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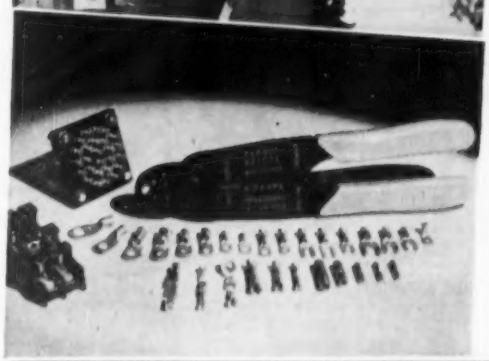
*JUNE, 1955



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Revere 99	f1.9	7mm f2.5	1½" f3.5	$ 97.50
Revere 44	f1.9	7mm f2.5	1½" f3.5	$109.50
B&H 134 TA	f1.9	7mm f2.5	1½" f3.5	$122.50
B&H 172 A	f1.9		1½" f3.5	$127.50
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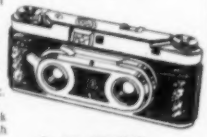

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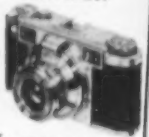

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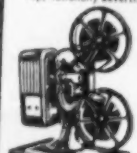

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3. Rush your order (and trade-in equipment if you have such) plus your remittance to cover—or instructions to ship C.O.D. for the balance or deferred payment terms as per your instructions.

Lenses for LEICA, CANON, CONTAX, NIKON

	New	Used	Trade-in
28mm f3.5 Serenarg W.A.	$134.00	$ 79.50	$ 55.00
35mm f2.8 Biogon W.A.g	183.00	126.95	100.00
35mm f3.2 Serenarg W.A.	94.00	69.50	45.00
50mm f3.5 Elmarg	57.00	34.00	25.00
50mm f1.5 Sonnarg	175.00	98.00	70.00
50mm f2 Summicrong	156.00	98.00	75.00
85mm f1.5 Lithogong	199.50	.....	95.00
85mm f2 Nikkorg	179.50	89.00	70.00
85mm f1.5 Summarexg	360.00	179.00	140.00
800mm f4 Serenarg	87.00	49.00	35.00
105mm f2.5 Nikkorg	152.50	104.00	75.00
135mm f4.5 Leitz Hektor Blk	.....	63.95	40.00
135mm f4 Sonnarg	146.00	88.00	65.00
1300mm f5.6 Kilarg	149.95	97.50	70.00

Lenses for EXAKTA, CONTAX D, PRAKTICA, PENTACON

	New	Used	Trade-in
28mm f3.5 Angenieux	$120.00	$ 73.95	$ 60.00
40mm f3.5 Makro Kilar Model Dg	114.95	78.50	60.00
50mm f1.9 Xenon Auto	169.50	119.00	85.00
58mm f2 Biotar	.....	49.00	30.00
85mm f1.5 Lithogong	179.50	.....	85.00
90mm f2.5 Angenieux	94.50	58.50	40.00
90mm f4 Sung	51.95	24.50	18.00
135mm f3.5 Angenieux	89.50	54.50	30.00
135mm f3.5 Sun preset	74.95	36.50	25.00
150mm f5.5 Tele Xenar	64.95	39.50	30.00
360mm f5.5 Schneider Tele Xenar	169.95	98.00	75.00
400mm f5.5 Tele Megor	134.50	97.50	75.00

ACCES. FOR IMPORTED CAMERAS

	New	Used	Trade-in
Leitz Adapter for Leica M3	$ 10.50	.....	.....
Leitz Mirror Reflex Housing	102.00	$69.00	$50.00
Zeiss Contametar Close Up	81.00	43.00	30.00
Novoflex Bellows for Leica, Contax	34.50	.....	15.00
Novoflex Reflex Housing for Leica Contax	145.00	.....	75.00
Novoflex Tripod and Stereo Rackover	18.50	.....	12.00
Novoflex Universal Panoramic attach.	11.50	.....	.....

LEICA CONTAX NIKON CANON

	New	Used	Trade-in
Canon IV $2 f1.8 Serenarg*	$284.00	$131.95	$115.00
Contax I f2 Sonnar	.....	59.00	35.00
Contax II f2 Sonnar	.....	83.95	65.00
Contax IIA f1.5 Sonnarg*	374.00	179.50	145.00
Contax IIIA f2 Sonnarg*	383.00	179.50	145.00
Leica IIIC f3.5 Elmarg	.....	92.00	70.00
Leica IIIF f3.5 Elmarg*	237.00	131.95	110.00
Leica IIIF f2 Summitarg*	268.50	145.95	120.00
Leica IIIF f2 Summicrong*	336.00	183.00	155.00
Leica IIIF f1.5 Summarit g*	357.00	185.95	160.00
Leica M3 f2 Summicrong*	447.00	.....	220.00
Nikon S2 f1.4 Nikkor g*	345.00	.....	170.00
Nikon f2 Nikkor g*	269.00	154.00	105.00

35MM SINGLE LENS REFLEX

	New	Used	Trade-in
Alpha 7 f1.8 Switarg*	$459.00	.....	$200.00
Exa f2.8 Westar MXg	85.00	44.95	35.00
Exakta VX f2 Automatic Biotar R.F.g	392.00	224.00	180.00
Exakta V f2 Biotar MX	.....	119.00	100.00
Exakta VX f2.8 Auto Westanar	239.50	149.50	125.00
Contaflex II f2.8 Tessar Auto R.F.g meter	199.00	129.00	95.00
Pentacon f2 Biotar pre-set*	249.50	129.00	100.00

35MM CAMERAS

	New	Used	Trade-in
Argus C4 f2.8 RF MX	$84.50	$46.00	$35.00
Bolsey Jubilee f2.8 Setomatic R.F. Case and flash	79.50	.....	40.00
Bolsey C f3.2 Reflex RFg*	89.50	38.95	30.00
Clarus f2.8 RFg*	.....	37.50	20.00
Kodak 35 f3.5 RF	.....	28.95	20.00
Kodak Retina IIC f2.8 R.F.g	135.00	105.00	65.00
Kodak Pony 135 f4.5 C*	29.75	17.95	12.00
Retina II f2 Xenon RF	.....	57.00	35.00
Minox II f3.5g	.....	48.95	30.00
Robot Royal II f1.9 Xenon R.F.	295.00	168.50	135.00
Robot IIA f1.9 Xenon Rap Seq.g*	89.50	57.00	40.00
Voigt Prominent f1.5 RF MXg	270.00	136.95	105.00
Voigt Vito III f2 RF MX*	119.50	69.50	45.00
Voigt Vitessa L f2 R.F. MX	159.50	107.50	75.00
Voigt Vito B	54.50	34.00	25.00

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8mm 25ft. Double Rolls	16mm 100 ft. Roll
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7 Rolls 14.99	3 Rolls 19.95

PRESS CAMERAS

	New	Used	Trade-in
23 Ann. Graphic RF f4.5 lens	.....	$ 82.95	$ 55.00
2x3 Linhof Super Tech RF 3 lenses comp.	$569.00	337.95	280.00
3¼ x4¼ Pacemaker Crown f4.7 KRFg*	267.45	138.75	100.00
4x5 1955 Pace Crown f4.7 Multifocus R.F.	287.50	.....	150.00
4x5 B&J Press f4.7 Kalart R.F.	197.50	89.50	60.00

SLIDE PROJECTORS

*Blower cooled	New	Used	Trade-in
Gold Manumatic 300W*	$ 58.50	$26.00	$20.00
Kodaslide Signet 500W*	77.50	49.00	35.00
LaBelle 55 Automatic 500W*	79.50	49.95	35.00
Revere 888 500W Auto Remote Case	119.50	.....	60.00
Revere 444 300W*	69.50	30.95	22.00
TDC Headliner 300W Semimatic*	49.99	28.50	20.00
TDC Mainliner 300W Semimatic*	59.50	30.50	25.00
TDC Duo 500W 2¼*	84.50	51.95	40.00

8MM CAMERAS

	New	Used	Trade-in
B&H 172 B f1.9 Magg	$164.95	$ 99.95	$ 75.00
Bolex C8 f2.8 Yvarg	89.50	.....	40.00
Bolex B8 f2.8 Yvar Turg	119.50	68.95	55.00
Bolex H8 Leader f1.9 Turg	259.50	143.95	115.00
Kodak Brownie f2.7g	37.50	20.95	15.00
De Jur Citation f2.5g	77.50	37.95	30.00
Keystone K-10 Capri f2.8g	54.95	33.95	25.00
Keystone Bel Air f2.5 Magg	89.50	46.95	35.00
Revere 84 f1.9 Turg	147.50	83.95	70.00
Revere 67 f2.8 Mag Turg	119.50	58.95	40.00
Revere 40 f2.5 Magg	99.50	52.95	40.00
Revere 44 f1.9 Mag Turg	154.50	93.50	65.00
Revere 88G f1.9 Magg	137.50	80.95	60.00
Vistascope Outfit Case	75.00	.....	40.00

16MM CAMERAS

	New	Used	Trade-in
Auricon Cine Voice f1.5g	$749.00	$538.00	$350.00
Bell and Howell Automaster Mag. Tur f1.9	.....	129.00	100.00
B&H 200T f1.9 Mag Turg	244.95	157.00	125.00
B&H 70 DL f1.9 Turg	365.50	218.00	175.00
Bolex H16 Leader (3 lenses complg.	399.45	229.00	180.00
Bolex H-16 De Luxe f1.4 Tur Octamtrg.	486.00	295.00	225.00
Bolex Pan Cinor f2.8 caseg	349.50	199.00	165.00
Cine Kodak Mag. f1.9	.....	57.00	45.00
Cine Kodak Special II f1.9g Tur	990.00	599.00	400.00
Eigeet Stereo Outfit Complete Spec.	89.50	69.50	50.00

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2¼	up to 2¼x2¼	C	Condenser
23	up to 2¼x3¼	D	Diffusion
2-35	both 35 and 2¼x2¼	CL	Coldlite
45	up to 4x5	AU	Auto Focus

	New	Used	Trade-in
23C or De Jur II f4.5g	$ 99.50	$ 59.50	$ 30.00
35C Federal 135 f4.5 storway	49.95	29.50	20.00
23D Federal 240 f7.9 storway	24.95	14.50	10.00
23D Federal 269 f6.3 storway	39.75	21.95	12.00
23C Federal 279 f6.3 storway	46.95	25.75	17.00
23C Federal 311 f4.5 storway	69.25	39.95	25.00
23CL Federal 315CL f4.5	80.00	49.50	30.00
45C Besseler 45M	198.75	.....	90.00
57CL Besseler 57MB	239.75	.....	160.00
45C AU Omega D3 AutoFocus	207.50	.....	105.00
45C Federal 470 f4.5	129.50	82.50	60.00
45CL Federal 450CL f4.5	114.75	69.50	50.00
23D Fotolarger Merit f6.9	23.95	14.50	10.00
23D Fotolarger D45 f4.5	48.20	27.50	20.00
57D Solar 57D	86.50	49.00	35.00

16MM SOUND PROJECTORS

	New	Used	Trade-in
B&H 285C 750W Case	$449.95	$249.50	$200.00
B&H 202C 1000W Magnetic Case	699.00	444.00	375.00
Revere SP16 750W Case	325.00	163.00	135.00

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35mm — 20 Exp. FACTORY PACKED

1 Roll $2.75 — 3 Rolls $7.25

Price Includes Dev. & Mtg.

120-620 ANSCOCHROME

1 Roll	$1.95	3 Rolls	$5.50
Size 828—3 Rolls			$4.75

35mm EKTACHROME ANSCOCHROME RELOADS

These Reload Cartridges are Laboratory packed and Quality Controlled by MINIFILM in its own Air Conditioned Darkrooms. Twenty and 36 Exposure Cartridges are manufactured daily from 100 ft. rolls received fresh from Eastman Kodak and Ansco. Careful supervision and tremendous sales turn-over insures you getting reloads which are equal in quality and freshness to cartridges packed at the factory. THE ONLY THING DIFFERENT IS THE PRICE. Take a tip from film-wise professionals . . . USE MINIFILM 1956 DATED RELOADS. Daylight or Indoor. INCLUDE 20¢ POSTAGE ON ALL FILM ORDERED.

ANSCO CHROME			EKTACHROME		
20 Exp.	Prices	36 Exp.	20 Exp.	Prices	36 Exp.
1 Roll..2.50	Include	1 Roll..3.75	1 Roll..2.50	Include	1 Roll..3.85
3 for..6.50	Developing	2 for..6.95	3 for..6.95	Developing	2 for..7.35
5 for.10.50	& Mounting	3 for..9.99	5 for.10.95	& Mounting	3 for.10.50

KODACHROME

35mm 20 Exp. Factory Packed Daylight or Type A

3 Rolls 5.55—6 Rolls 10.50

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35mm 20 Exp. 6 Rolls $1.99—10 for $3
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50 feet $2.45 — 100 feet $3.95

LOAD YOUR OWN 35mm ANSCO CHROME (SO QUICK—SO EASY—SO ECONOMICAL) A CHILD CAN LOAD A ROLL IN 90 SECONDS

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1956 Dated—Frame Numbered

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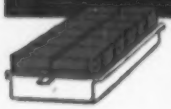

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tools and techniques

by Norman C. Lipton

A round-up of recent developments and significant trends

Robot Royal 400. The first miniature camera incorporating an oversize film magazine to reach the market since the 250-exposure Leica Model FF was discontinued in 1940 is the Robot Royal 400 Shot Camera now being distributed nationally by the Intercontinental Marketing Corp. of New York. Up to thirty-three feet of standard 35-mm film providing 400 1x1-inch exposures can be loaded into the magazine, which fits onto the right-hand side of a specially modified Robot Royal camera. When the magazine is removed, it can be replaced with the standard Robot camera back, permitting the camera to be used with ordinary 35-mm film cartridges. Apart from the unique film-loading facility, the new camera is almost identical in structure and function to the Robot Royal, which features the exposure of 24 consecutive frames on a single winding of the camera's built-in spring motor by merely keeping the exposure lever depressed. Prices of the 400 Shot Camera including the special film magazine and the regular camera back begin at $550, the specific amount depending on the lens equipment ordered.

News from Japan. An interesting compromise between the design of the discontinued Leica Model IIIb (G-1938) and the current Leica M-3 with internal flash synchronization and hinged back is incorporated in the Nicca Model 5 announced in the June 1955 issue of *Japan Camera Trade News*. Like the M-3 Leica, the new Nicca camera has a baseplate which must be removed to load film into the camera. Unlike the back cover of the M-3, which is hinged at the top so as to open at the bottom, the cover of the Nicca is hinged at its right-hand side so the cover opens laterally; in addition, it can be completely detached if desired. The Nicca camera is sold in this country with Nikkor lenses as the Tower 35 (Models 42 and 43), by Sears Roebuck & Co. on an exclusive basis. . . . The first 8-mm cine camera ever produced in Japan was also announced in the same issue of *Japan Camera Trade News*—the Cinemax-8 with Nikkor *f*/1.9 lens. This is made by Osawa Trading Co., Tokyo, sole agent in Japan for Bell & Howell.

Fluorescent Color Lighting. Due to inherent differences in the nomenclature and structure of fluorescent tubes made by the various lamp manufacturers, it has been impossible for color-film manufacturers to give uniform filtering data for good reproduction of fluorescent lighting installations without undertaking exhaustive test programs. Consequently, the lamp manufacturers have obliged with studies of their own. In T&T for February 1954 we abstracted a paper by Willard Allphin of the Sylvania Electric Co. titled *Photographing Fluorescent Lighting Installations in Color* and tabulated recommendations for optimum reproduction with both Daylight Type and Type "A" Kodachrome for seven Sylvania fluorescent lamps. More recently, we came across a corresponding paper by Tom Knowles of the General Electric Lamp Department, *More Tips on Lighting Photography*, published in full in the June 1954 issue of *Illuminating Engineering*. This study was abstracted in the January 1955 issue of *National Photographer* along with tables for seven corresponding G-E fluorescent tubes employed with Daylight Type and Type "B" Ektachrome (E-1). In view of the announced change-over of Ektachrome rollfilm to the new E-2 process, we are not reproducing the Ektachrome E-1 tables here. Interested readers can get the data from the respective lamp manufacturers.

Time Lapse Controls. An equipment system that permits time-lapse movies to be made with *any* spring-drived movie camera, whether or not the latter has a built-in, single-frame control, has recently been brought to our attention. The equipment comes in two basic models under the name of Samenco Movie Controls—one permitting exposures to be made at intervals between one per second and one every 12 minutes and the other between one per second and one every 20 minutes. Both the operation of the camera and that of the light source are actuated by the control mechanism. The two basic control units are priced at $168 and $198, respectively. Necessary solenoid equipment ranges between $15 and $22.50, and inverters to permit camera operation from 6- and 12-volt storage batteries are priced at $19.50 and $22.50 respectively. Descriptive literature is available from Sample Engineering Co., 17 N. Jefferson Street, Danville, Illinois.

New Electronic Engraver. When Fairchild's Scan-a-graver, which produces plastic half-tone printing plates directly from photographs and other continuous-tone copy, made its debut six years ago, it caused a revolution in newspaper practice throughout the United States and Canada. As a result of the speed, simplicity, and relatively low rental cost of the equipment, the use of local news pictures has increased tremendously, particularly among newspapers in suburban areas and smaller cities. Today about 5,000 Scan-a-graver units are in use, world-wide.

At the May 1955 meeting of the New York Section, Technical Division, PSA, J. A. V. Hyatt and S. Levine of Fairchild Graphic Equipment, Inc. described and illustrated their company's latest contribution to electronic engraving—the Fairchild Scan-a-sizer. Like the early equipment, this instrument produces plastic printing plates by picking up the high-

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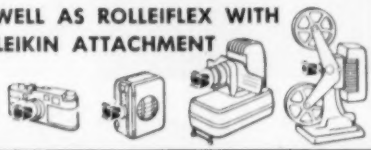
For the first time, amateurs and professionals can achieve the effects Hollywood has produced. Just slip on VISTASCOPE and Presto!—you take *and* project 50% *more* in each picture! Your old pictures will look tiny and unrealistic by comparison!

BREATHTAKING FULL DIMENSIONAL REALISM
You get amazing you-are-there realism, surpassing even Hollywood's wide-screen realism.

VISTASCOPE

LENSES FIT ALL 8 AND 16mm MOVIE AND 35mm* SLIDE CAMERAS AND PROJECTORS, AS WELL AS ROLLEIFLEX WITH ROLLEIKIN ATTACHMENT

Lenses come in special, unbreakable lined leather case.



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TRY IT FOR 15 DAYS. UNCONDITIONALLY GUARANTEED TO BE THE FINEST ANAMORPHIC SYSTEM IN THE WORLD

Try VISTASCOPE for 15 days to prove to yourself the amazing things it does for you. If you don't get the most sensational, real-life, full dimensional realism, return the lens.

WHAT EXPERTS AND AMATEURS SAY:

Mr. B.R.C. of Philadelphia, Pa., says: "No words can express my sincere happiness for my new VISTASCOPE. I feel sure a mammoth boom is just starting for your wonderful lens.

JOHN GREGORY, Associate S.M.P.T.E.: ". . . results are truly remarkable . . . creates the effect of actually being there and taking part in the action . . ."

Mr. R.C.N. of Altoona, Pa., says: "I ran off my completed films in VISTASCOPE for my parents and they were amazed at the clarity, sharpness and size. You can certainly spread my good word about VISTASCOPE."

NORMAN C. LIPTON, Popular Photography: "Combines reasonable cost factor with unprecedented image quality. Over all sharpness and color correction."

LOW COST

For 8mm. movie cameras and projectors **$75.00** — Only **$7.50** down

For 16mm movie and 35mm* still cameras and projectors and Rolleiflex with Rolleikin. **$125.00** — Only **$12.50** down

* Having 65mm. or longer focal length. Example: Leica, Contax, Exacta, Canon, Nikon, Voigtlander, etc.

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References: Dun-Bradstreet National City Bank of N. Y.

50% MORE PICTURE! 50% LESS FILM!

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VISTASCOPE is a double-purpose anamorphic lens embodying the same principles as those used in the movies. When you place the VISTASCOPE lens on your camera, the 50% wider image is "squeezed" onto the same area of film that a regular lens would take. When the same VISTASCOPE lens is attached to your projector, the image is then "unsqueezed" onto the screen with no loss in image height—and absolutely no distortion.

VISTASCOPE IS EASY TO USE

- You use standard cameras . . .
- standard film.
- standard processing.
- standard screen.
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Just slip VISTASCOPE on to your regular or telephoto lens — then shoot — that's all! Two 16mm VISTASCOPES MAY be used to take widescreen stereo movies!

VISTASCOPE QUICKLY PAYS FOR ITSELF— SAVES 50% ON FILM COSTS

VISTASCOPE'S 50% wider image means less panning. You get close-ups and long shots in one frame. One shot now does what it took two or three before! The saving in film alone will pay for your VISTASCOPE!

THOUSANDS OF FANS ARE CLAMORING FOR VISTASCOPE

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Please rush me the following:

☐ 8mm VISTASCOPE lens.
☐ 16/35mm. VISTASCOPE lens.

Enclosed is $ _____ ☐ Down payment ☐ Complete payment
(C.O.D.'s—10% down payment required)

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EMPLOYER _____

THE AUTOMATIC PENTACON

AUTOMATIC PENTACON WITH:

50-mm f/2 fully automatic preset diaphragm Westagon $259.50

50-mm f/1.5 preset diaphragm Angenieux $21 $299.50

Here is the aristocrat of the automatic single-lens reflexes—the luxurious and impressive 35-mm Pentacon, superb product of German engineering. The Pentacon shows you the actual picture you are getting in the enlarged, film-size, eye-level prism viewfinder up to the instant of exposure to assure complete control of composition, image sharpness and depth of field. The image is erect with sides unreversed—a distinct advantage in sports and other fast action photography.

Some of the other outstanding Pentacon features are: coupled film transport and shutter cocking; speeds from 1 second to 1/1000th with a focal plane shutter; built-in synchronization for regular and electronic flash; built-in delayed action self-timer; interchangeability of lenses ranging in focal length from 28 to 1,000 mm; no parallax; available with a complete line of fully automatic and preset diaphragm lenses.

THE AUTOMATIC PRAKTIFLEX FX

AUTOMATIC PRAKTIFLEX FX WITH:

50-mm., f/2.8 fully automatic Isco Westanar $139.50

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The Automatic Praktiflex FX is the latest model of the camera that has made photographic history by bringing you the countless advantages of the 35-mm., single-lens, reflex system with the versatility, operating speed and ease of the fully automatic preset diaphragm lens at a very moderate price.

The Automatic Praktiflex FX gives you the exact picture you see on the viewfinder ground glass by means of through-the-lens focusing—no parallax, complete control of composition, sharpness and depth of field, an upright image on the ground glass. Other features include: interchangeability of lenses from 28 to 1,000 mm., including a complete line of fully automatic and preset diaphragm lenses; built-in synchronization for regular and electronic flash; speeds from 1/2 to 1/500th second with focal plane shutter; and coupled film transport and shutter cocking.

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An authoritative manual for Praktiflex Camera owners containing complete information for the use of each feature of the Praktiflex representing the practical experience of an internationally known photographer and author. There are chapters devoted to lenses, portraiture, nature studies, photographing flowers, sports, pictorial, aerial, copying, and microscope photography with the Praktiflex. Use of bellows, extensions, extension tubes, copying of letters, documents and stamps are clearly explained and illustrated. Over 90 excellent photographs. 132 pp., cloth bound, 5½x9". Price $3.00. See it at your dealer. Brochure free on request.

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f/2.8, 50mm

Here is an excellent standard lens of high definition and quality. Renders gratifying results of professional caliber. Its 50mm focal length and f/2.8 speed make it suitable for general and specialized photography. The Westanar is a four-element lens with all qualities of a most modern objective.

Automatic Westanar f/2.8, 50mm lens is priced at . . . $69.50

AUTOMATIC WESTAGON

f/2.0, 50mm

The Westagon is a fast lens for general, action and dim-light photography; the product of the famous German factory, Isco-Gottingen. It has a focal length of 50mm with a maximum aperture of f/2.0. This added speed may make the difference between getting a picture and losing it. The Westagon is a six-element lens of advanced, postwar design.

Automatic Westagon f/2.0 lens is priced at . . . $110.00

FOR MORE INFORMATION, SEE YOUR DEALER OR WRITE

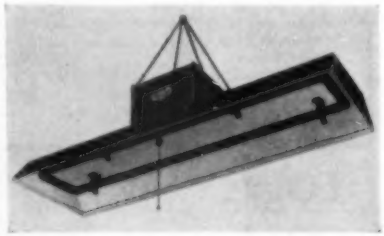
PRAKTICON CO., INC. 705 BRONX RIVER ROAD BRONXVILLE 8, NEW YORK

Exclusive factory appointed representative in the U.S.A. for Sales and Service of Pentacon and Praktiflex Cameras

light and shadow portions of the original copy and translating them into electronic energy by means of photocells connected to an amplification circuit. The image-defining craters in the plastic plate are produced by a heated stylus attached to a vibrating motor actuated by the electronic energy.

The Scan-a-sizer is extremely flexible and versatile. It can automatically enlarge or reduce as much as 4½ times the original copy size. Copy as large as 18x22½ inches can be accommodated, and Scan-a-gravings up to 13x16½ inches can be produced. The push-button screen selector of the new unit permits either a coarse 85-line screen or a 120-line screen to be positioned instantly in operating position. Additionally, with the aid of a new auxiliary Variable Response Unit, the tone gradations of the reproduction can be controlled over an infinite range. Production speed has been increased to the point where an 8x10-inch 85-line screen plate can be produced in 24 minutes. Although Fairchild's literature makes no reference to color, the New York presentation included a display of several 3-color engravings that had been reproduced by merely making three successive Scan-a-gravings through the respective additive primary color filters and printing the three plates in register with the corresponding complementary engraving-ink colors. Production of the Scan-a-sizer is expected to get under way toward the end of 1955. Until then, 10 pilot models will be field-tested throughout the country.

Cold Cathode Safelights. A new departure in darkroom safelight design is embodied in two new ruby-colored Aristo Cold Light Safelights recently introduced by Aristo Grid Lamp Products, Inc., 106-23 Metropolitan Avenue, Forest Hills, N. Y. These units are based on the fundamental principles of Aristo's cold-cathode enlarging-light sources which are available in a variety of grid sizes with different spectral distribution characteristics.



Ruby cold-light safelight comes in an elongated ceiling-suspension, reflector housing unit.

Intended principally for graphic arts and industrial photographic darkroom use, the two new safelights come in elongated reflector housings—model C-RS 18 in a 5¼x 18" reflector, at $38; model C-RS 26 in an 8½x26" reflector, at $58. The long housing design is claimed to produce a unique light-diffusion pattern which eliminates shadows and illuminates heretofore unusable corners of the work area.

Odds and Ends. "Inversion agitation" is an unusual feature of the Paterson Major

32 VALUABLE PRIZES

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PSA Journal

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Open to all · Rules are simple · Nothing to buy

Prize-winning pictures may be used for Zeiss Ikon exhibitions, publicity and advertising.

FIRST PRIZE
Contax III-a (with meter), f/1.5 Sonnar 50mm lens, and Eveready case (value $428)

SECOND PRIZE
Contax II-a, f/1.5 Sonnar 50mm lens, and Eveready case (value $390)

TWO THIRD PRIZES
Contaflex II (with meter) and Eveready case (value $213)

TWO FOURTH PRIZES
Contaflex I and Eveready case (value $181.50)

FOUR FIFTH PRIZES
Ikoflex II-a and Eveready case (value $142)

FOUR SIXTH PRIZES
Ikoflex I-a and Eveready case (value $110)

SIX FIRST AWARDS OF MERIT
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Ikoblitz 0 flash units (value $9.50)

CONTEST CLOSES NOV. 15

Entries must be postmarked prior to midnight Nov. 15, 1955

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1. Prints must be from black-and-white negatives produced by postwar models of Zeiss Ikon cameras.
2. Up to six prints (all in one package) may be submitted by each contestant.
3. Prints should be 5 x 7 or larger, black-and-white.
4. Each print must bear owner's name and address and camera model.
5. Pictures will be judged on technical excellence and general interest. Those with human interest and/or animation will be preferred.
6. Prize-winning pictures become the property of Carl Zeiss, Inc., and negatives of such pictures must be released to Carl Zeiss, Inc. for advertising purposes.
7. Prints of non-winning pictures will be returned to their owners.
8. Contest is open to residents of the United States and its territories. Employees of Carl Zeiss, Inc. and members of their families are not eligible.
9. Prizes will be delivered through Zeiss Ikon dealers.

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I enclose _____ prints to be entered in your Photo Contest in accordance with your rules. Please return non-winning prints.

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My dealer is _____

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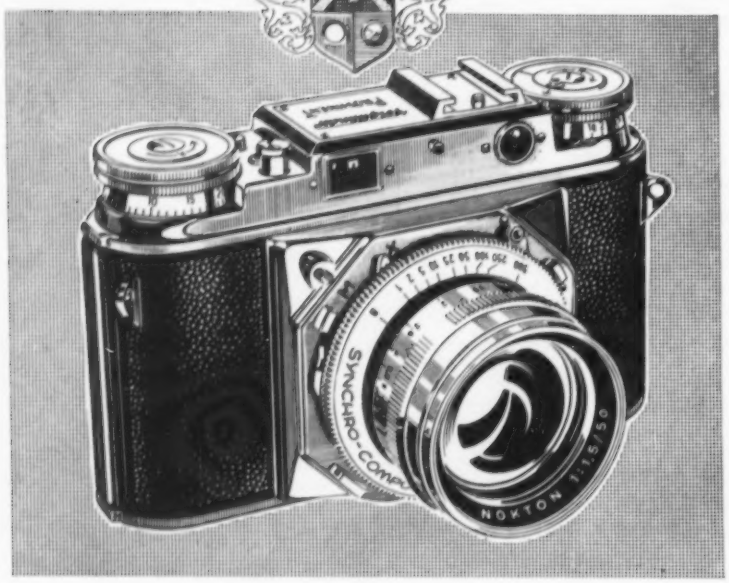

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To be modern, a camera must have certain definite factors. It must be easily operated by any amateur. It must be reasonable in price. It must be equipped with the most up-to-date technical features. Only a camera that has ALL these advantages can be called modern. But it takes generations of optical and precision experts to make cameras with all these features.

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One of Voigtländer's latest and greatest creations is the PROMINENT and its system of new, interchangeable, high-efficiency lenses.

VOIGTLÄNDER PROMINENT 35 mm miniature camera, Synchro-Compur Shutter, fully synchronized up to 1/500 sec. Rangefinder with Automatic Coincidence Compensation (patented). Range of new interchangeable high-efficiency lenses:
the COLOR-SKOPAR f/3.5, the ULTRON f/2, the NOKTON f/1.5, wide-angle SKOPARON f/3.5, telephoto lens DYNARON f/4.5

Prices: $ 157.50	with COLOR-SKOPAR f/3.5
$ 220.00	with ULTRON f/2
$ 270.00	with NOKTON f/1.5
$ 12.50	Everready Carrying Case.

SKOPARON f/3.5

DYNARON f/4.5

VOIGTLÄNDER top-quality anastigmatic lenses feature:

1. Maximum sharpness at full aperture.
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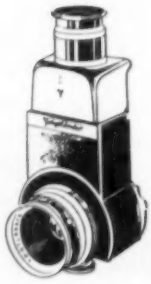
Voigtländer interchangeable lenses help the PROMINENT to tackle all photographic problems:
SKOPARON f/3.5, wide-angle lens, 63° angle of view, directly coupled to rangefinder.
DYNARON f/4.5 the telephoto lens, focal length of 100 mm offers pinpoint definition.
100 mm TELOMAR f/5.5 a telephoto lens with reflex housing.


100 mm TELOMAR f/5.5

Voigtländer because the lens is so good

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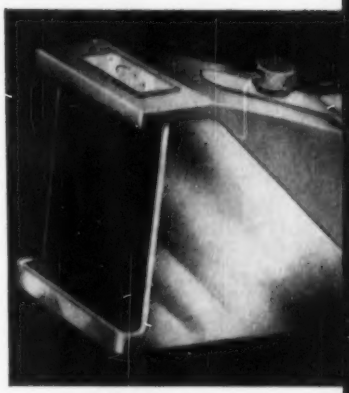
AMERICA GOES WIDE-SCREEN

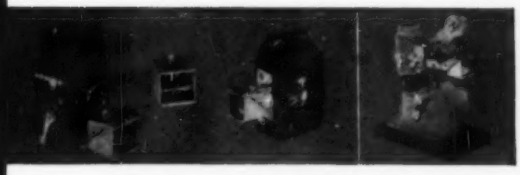
Home movie and slide camera fans create spectacular effects using Vistascope lens on their present equipment



Introduced into the United States with less fanfare than accompanied Cinerama, Cinemascope and other wide-screen Hollywood techniques, the Vistascope lens is now giving amateur and professional photographers new horizons in picture taking. Shooting from cars, roller coasters, speedboats and airplanes, home movie and slide camera owners are thrilling their friends with big, spectacular pictures containing overwhelming impact and three-dimensional realism.

The Vistascope lens is an anamorphic optical system similar to that used in making Cinemascope pictures. It retains the full image size without distortion. Anamorphic lenses form one image with two different focal lengths, one for height, the other for width, thus securing three-dimensional quality.

Like Cinemascope, Vistascope supplements the lens used on the camera. When attached in front of the regular lens, Vistascope 'squeezes' 50% more horizontal area onto each regular frame of film. Then, when placed on the projector, it 'unsqueezes' the image, projecting the wide picture onto wall or screen with forceful realism. Vistascope is the first anamorphic system to produce color slides for the amateur photographer.



The Vistascope anamorphic lens is easy to use as it only requires a sunshade adapter ring to fit any camera lens. Standard cameras, color or black and white film, processing, screen and projectors are used. The picture above shows Vistascopes attached to various equipment.

The principle was developed after years of research by Dr. A. Bouwers of Delft University, Holland. A world-renowned physicist, he invented the universally used rotating anode X-ray tube.

The scene on the left was taken with a normal movie lens. The scene on the right, taken with a Vistascope lens, contains 50% more picture — without distortion or loss in image height. Glasses are not necessary to secure a 3D effect when viewing Vistascope films.

At $75.00 for 8mm. movie cameras and projectors, and $125.00 for 16mm. movie and 35mm. slide cameras and projectors, and Rolleiflex with Rolleikin, the Vistascope lens is within the pocketbook range of most camera fans. For complete information, write to Godfrey Corporation, Box 845, New York 8, N. Y., Dept. P-10.

Now YOU CAN AFFORD THE BEST!

Minolta HIGH-PRECISION REFLEX CAMERAS

Minolta cameras have the features of the most costly twin-lens reflex cameras, plus exclusive advantages not found in the most expensive makes. They are manufactured by Chiyoda Kogaku Seiko, K.K., one of the world's most popular camera manufacturers, who, since 1927, has been producing a complete line of Minolta top-quality photographic and optical equipment exclusively, making the entire product, including lenses.

No other company, anywhere in the world, boasts higher standards throughout every step of the way. From the initial design to the finished product, there are ethical and production rules that must be strictly adhered to. It is no wonder, then, that Minolta Means More, in any language.

Minolta AUTOCORD FULLY *Automatic*

HELICAL FOCUSING LEVER, actuated by index finger of hand supporting camera, sweeps focus from 3 ft. to infinity in a single stroke. Automatic film transport advances film, counts the exposure, and sets shutter. TAKING LENS is ROKKOR 75mm F/3.5, 4-element, highly color corrected and coated. VIEWING LENS is ROKKOR 75mm F/3.2, 3-element, fully coated. OPTIPER MXS PRECISION SHUTTER, synchronized at all speeds from 1 second to 1/400th and bulb, with built-in self timer and safety-locking body shutter release. **$99.50 list**

SEMI *Automatic* **Minoltacord**

HELICAL FOCUSING LEVER adjusts focus. FILM TRANSPORT LEVER advances film. COCKING LEVER sets shutter. TAKING LENS, PROMAR SIII 75mm F/3.5, fully coated. VIEWING LENS is F/3.2, OPTIPER MXS SHUTTER synchronized at all speeds from 1 second to 1/400th and bulb, with built-in self timer.
$69.50 list

DOUBLE GUARANTEE
In addition to Chiyoda Kogaku's unconditional guarantee, Minolta cameras bear the guarantee of our exclusive U. S. Sales Agents, the FR Corporation—an iron clad combination for your satisfaction and protection. For literature write to:
The FR CORPORATION
951 Brook Avenue, New York 51, N. Y.

Manufacturers of Fine Cameras and Lenses since 1927.

CHIYODA KOGAKU SEIKO, K. K., OSAKA, JAPAN

NEW YORK OFFICE: 150 Broadway, New York 38
In Canada, Anglophoto Ltd., Montreal, Toronto, Vancouver

II roll-film developing tank recently arrived on the British market. A reservoir is provided above the reel housing which permits the entire liquid content of the tank to drain away from the film when the tank is rotated to an upside-down position with the tank cap in place. Solution is poured into and out of the tank through a large lightproof vent in the center of the tank lid.

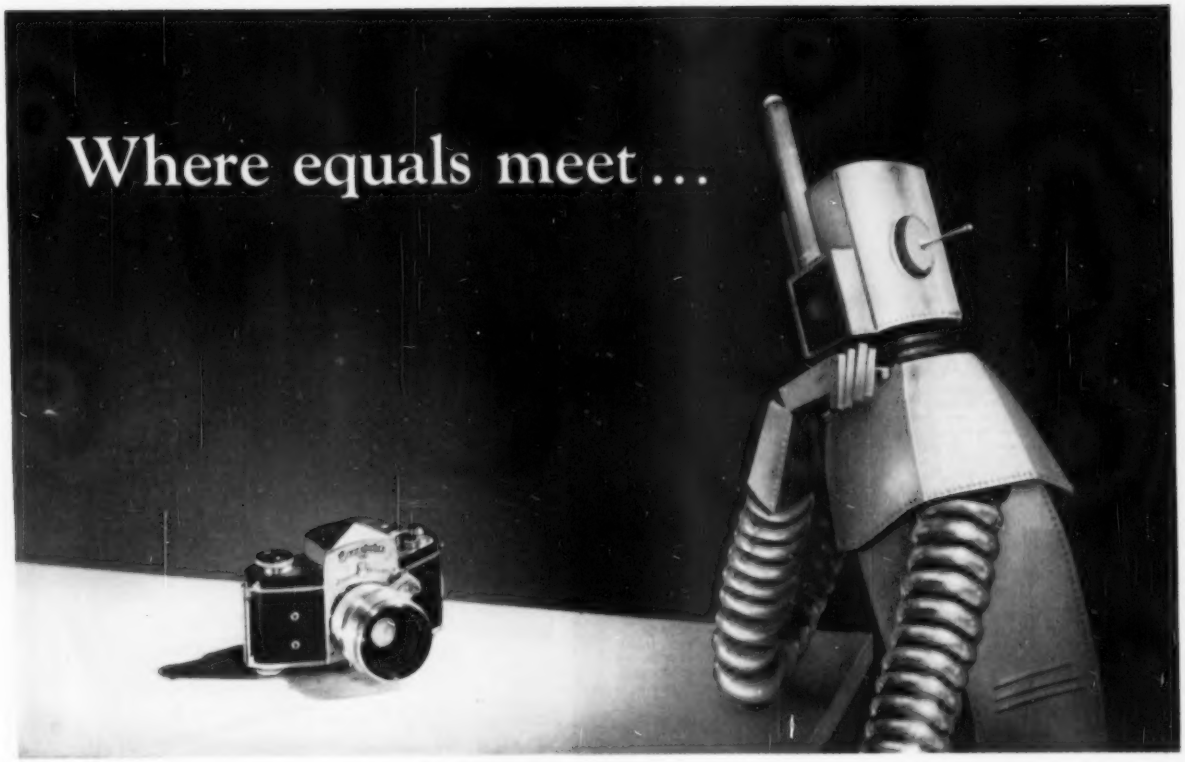
. . . An electronic camera test panel capable of locating malfunctions in complex electrically operated camera equipment was recently demonstrated by Alan Gordon, head of Gordon Enterprises (a large camera-equipment manufacturing concern) before the joint meeting of the American Society of Photogrammetry and the American Congress on Surveying and Mapping, at Washington, D. C., last March. The instrument is actuated by a numbered control dial keyed to various operating mechanisms of the camera being checked.

. . . An automatic "correct exposure" enlarging baseboard, the Agfa Variomat, was one of the fascinating new developments exhibited at the London Photo-Fair last May. There is a photoelectric cell under the printing area which switches off the enlarger light source as soon as the amount of light necessary for correct exposure has fallen on the printing paper. The exposure is, of course, independent of the enlarger lens opening and the degree of enlargement. A calibrated adjustment is provided to adapt the control mechanism to the sensitivity of the paper used, and an auxiliary adjustment permits corrections to be made where over- or underexposure or local printing or dodging is called for.

. . . Development of a new magnetic (tape) playback head with built-in magnetic amplifier action (in other words, a modulator head) is announced in the 1954 Annual Report of the Armour Research Foundation of the Illinois Institute of Technology, Chicago. The unusual performance characteristics of this head (unusually high signal level, plus inherently flat frequency response) permit "information" to be played back at extremely slow tape speeds; in fact, it permits magnetic field strength to be read at a given point when the tape is motionless. As a result of this development, magnetic tape can become an invaluable instrumentation tool utilizing simple, rugged playback equipment. Also envisioned are conventional magnetic tape recordings of unprecedentedly high fidelity.

. . . The 1956 dates for the Photokina fair at Cologne, Germany, have been changed to September 29 through October 7, in place of the March dates announced in July T&T.

. . . To avoid any misunderstanding as to trade name registry, we wish to reiterate the fact that "Phenidone" is the proprietary name for the developing agent 1-phenyl-3-pyrazolidone registered in the United States and abroad by Ilford, Ltd., London.—



The Automatic Age is no longer categorized among "things to come". It is here! In many fields, Mechanical Men are performing wonderful things. In the field of photography too, there is an Automaton . . . the Automatic Exakta VX.

The Automatic Exakta VX with Penta Prism eye-level viewfinder and Split-image Rangefinder and 58-mm, f/2.0 Automatic Zeiss Biotar Lens is priced at $392. Also available with waist-level finder. The Automatic Exa has most of the advantages of 35-mm, automatic, single-lens, reflex photography in a camera foolproof enough for a child to use. The Automatic Exa is equipped with the 50-mm, f/2.8 Automatic Isco Westanar, and is priced at $129.50. Automatic Exa with Isco Westanar f/2.8, 50-mm lens and Penta Prism, $159.50. Automatic Isco Westanar lens alone, $69.50.

Put an Automatic Exakta VX or Automatic Exa to the test, and you will see the Automatic Age of photography in motion . . . Today!

Your dealer will gladly demonstrate these outstanding cameras to you.

EXAKTA CAMERA COMPANY, 705 Bronx River Road, Bronxville 8, N. Y.

Exclusive Factory Appointed Representatives in the U.S.A. for Sales & Service of Exakta and Exa Cameras

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Visit our Skyline Suite to say "Hello!"

Hitch your wagon to the star! . . .
1956 CONTAX II-A and III-A

ZEISS IKON

Single-window for rangefinder and viewfinder, metal focal plane shutter, removable back, bayonet lens mount, delayed action release, full built-in flash synchronization are just a few of the reasons for the acknowledged leadership of CONTAX! Contax II-A with Tessar coated f/3.5 lens **$261. Cash or $26.10 Down**; with Sonnar coated f/2.0 lens **$345. Cash or $34.50 Down**; or with Sonnar coated f/1.5 lens **$374. Cash or $37.40 Down.** For Contax III-A (with built-in exposure meter) add **$38. Cash or $3.80 Down.**

Selected Contax Lenses and Accessories

Biogon 21mm f/4.5	$249.00 Cash or $24.90 Down
Biogon 35mm f/2.8	183.00 Cash or 18.30 Down
Planar 35mm f/3.5	102.00 Cash or 10.20 Down
Triotar 85mm f/4.0	106.00 Cash or 10.60 Down
Sonnar 85mm f/2.0	229.00 Cash or 22.90 Down
Sonnar 135mm f/4.0	146.00 Cash or 14.60 Down
Stereotar C, 35mm f/3.5's	159.00 Cash or 15.90 Down
Stereo Prism Attachment	37.00 Cash or 3.70 Down
Stereo Viewfinder	10.00 Cash or 1.00 Down

1956 ▲ IKOFLEX

Ikoflex I-A with Novar coated f/3.5 lens in Prontor full synch' shutter **$76. Cash or $7.60 Down; Ikoflex I-A** with Tessar coated f/3.5 lens in Prontor full synch' shutter **$96. Cash or $9.60 Down;** and the superlative **Automatic Ikoflex II-A** with Tessar coated f/3.5 lens in Synchro-Compur MX shutter **$126. Cash or $12.60 Down.**

1956 CONTAFLEX

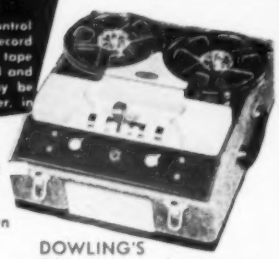
The gem of all 35mm Single Lens Reflex cameras! Ground-glass eye-level focusing is combined with split image rangefinder. Superb Tessar 45mm coated f/2.8 lens, with fully automatic diaphragm. Contaflex I **$169. Cash or $16.90 Down;** Contaflex II (Built-in meter) **$199. Cash or $19.90 Down.**

Just released! . . . Brand new 1956 CLIPPER

THE SUPERB **Pentron** **PORTABLE** TAPE RECORDER

***With Exclusive* MONOMATIC* CONTROL**

MONOMATIC is a single knob control providing instant selection of Record or Play, in either 7½" or 3¾" tape speeds, as well as Fast Forward and Fast Rewind. Any position may be selected by a flick of the finger, in either tape speed.



The CLIPPER
(Don't confuse with discontinued models!)
Dual Track Dual Speed
$129.50
Cash or only $12.95 Down

- Plays in any position!
- Simplest to operate
- High fidelity performance
- 2-speed, 2-hour operation

DOWLING'S Fifth Avenue also features
Pentron Multi-speed Portable Tape Recorder.
$189.50 Cash or $18.95 Down
Pentron 3 Speaker High Fidelity Tape Recorder for life-like dimensional presence.
$225.00 Cash or $22.50 Down

Hi-fi enthusiasts! Write D. F. A. for free brochure on Pentron low cost hi-fi tape components for portable use and custom installations!

A Cordial Invitation...

No doubt about the ease of shopping by mail! . . . But it is nice to meet personally our mail order friends. Whether to say "hello" or to talk cameras, you'll find a warm welcome! Our Mail Order Division is on the 20th Floor (Skyline Suite) of that famous landmark, the Flatiron Building . . . The panoramic view of New York is most photogenic. When you are in our home town, please do stop in!

MORE POWER! MORE LIGHT! PERFECT PERFORMANCE!

Dormitzer SYNCTRON

with the new "million prism" reflectors

New 1956 DB-SM-1 Synctron Dry Battery Unit

- Conservative color **guide number** of 45; fast black and white—220.
- New high-efficiency **GE118 flash tube.**
- **Light output**—2650 lumen seconds.
- **Weight**—only 5 lbs.
- **Size**—only 8½" X 2¼" X 6½".
- **Recycling time**—5 to 8 seconds.
- **Flash duration**—1/2000th second.
- **Batteries**—expectancy of 500 flashes; replacement cost only $4.25!

Complete price, including cord and batteries . . .

Now Only
$89.50 Cash or $8.95 DOWN

Other Powerful Dormitzer Synctron Units

Model 100—Professional	$237.00 Cash or $23.70 Down
Model 200B—Super Pro	275.00 Cash or 27.50 Down
Model 208B—Super Candid	190.00 Cash or 19.00 Down
Model 215—Economy (A.C. only)	72.50 Cash or 7.25 Down
Model 223—Studio Light	495.00 Cash or 49.50 Down

(Prices indicated include battery and charger, except of course with A.C. Model 215.)
FREE Dormitzer Synctron brochure is yours simply by writing to DOWLING'S Fifth Avenue!

UHLER Cine Printers

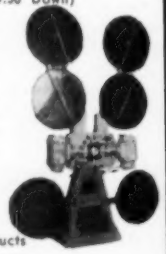
. . . **the** standard of perfection!

Uhler 16mm Sound Cine Printer! (illustrated)

Makes contact prints of both sound and silent pictures in black and white or color. Prints picture and sound at the same time. 400' capacity; beautiful precision finish. Copies of all your favorite films can be made at about one-quarter the cost of the original. It's easy and lots of fun to make your own prints at home. Titles may be made with double exposed motion background as shown in theatres. Complete instructions are furnished with each machine.

$125. Cash or $12.50 Down
◀ (Uhler 16mm Silent Cine Printer **$95. Cash or $9.50 Down)**

Uhler Combination 8mm and 16mm Continuous Printer ▶
(illustrated)



For professional or amateur movie makers, laboratories, schools and technicians—where the highest quality prints are required. Black and white or color; single or double system sound — film is run through the machine once only. 1200' capacity. Printing speed up to 1600' per hour. Lamps are air-cooled. Built-in filter holder for color film printing.

$685. Cash or $68.50 Down

Other Uhler Precision Cine Products

Combination 35mm Continuous Printer for Sound or Silent Pictures (capacity — 6-1200' feed and take-up discs)	$1145.00 Cash or $114.50 Down
Reduction and Enlarging Printer for 8mm and 16mm (1200' capacity)	1056.88 Cash or 105.68 Down
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1956 LORDOMAT

Amazing new precision "35" from Wetzlar, Germany!

- Interchangeable lenses, all rangefinder coupled
- Rapid wind lever
- Viewfinder and rangefinder in single window
- Built-in self-timer
- Double exposure prevention mechanism
- M-X synchro shutter
- Speeds from 1 second to 1/300th second
- Complete with 50mm f/2.8 Lordon coated lens with click stops

Only $89.50 Cash or . . .

$8.95 DOWN

Lordomat Accessories

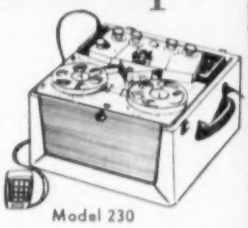
(All available from D.F.A. with 10% Down Payment)

Lordonar 35mm coated f/3.5 wide angle lens	$55.00
Telorden 90mm coated f/4.5 telephoto lens	64.50
Combination viewfinder for both lenses	12.50
Deluxe leather eveready case	9.95
Flashgun	7.95

Golden Tone WEBSTER ELECTRIC Ekotapes

the ultimate in sheer functional beauty and high-fidelity!

- Finger-tip operation
- Single unit control
- Interlocking erase . . . prevents accidental erasure
- Instantaneous speed change to 3¾" or 7½", as desired
- PLUS a host of other features, making Ekotape **your** best tape recorder buy among recorders of the highest calibre



Model 230

EKOTAPE Model 240 (2 speed) ... **$189.50 Cash or $18.95 Down**
EKOTAPE Model 230 (2 speed; single 5 x 7 oval PM speaker ... **219.50 Cash or 21.95 Down**
EKOTAPE Model 220 (2 speed; automatic speaker silencer; counter; 2 speakers, 5 x 7 oval woofer; 3" tweeter—10,000 CPS guaranteed) ... **239.50 Cash or 23.95 Down**
EKOTAPE Models 222 and 224 (similar to Model 220 but with 6 x 9 woofer; housed in beautiful LIMED OAK or MAHOGANY table cabinet—please indicate your preference ... **259.50 Cash or 25.95 Down**

FREE Golden Tone EKOTAPE brochure on request, or order directly from DOWLING'S Fifth Avenue **today!**

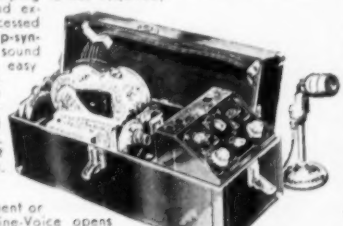
FREE Postage!

You'll find this so convenient and economical too. No need for you to estimate shipping costs. D. F. A. pays all regular shipping and insurance expenses . . . and guarantees safe arrival of your equipment. This includes A.P.O., F.P.O. and export orders! Upon request, air shipments gladly made; and you'll be billed just for the slight extra cost!

AURICON Cine-Voice

YOU can produce 16mm talking pictures the Hollywood way! While "shooting", the Cine-Voice camera simultaneously photographs a sound track along one film edge. The film cost, black and white or Kodachrome, is identical to silent types. Magnetic striping is **not** required, saving you both time and expense. Best of all, the processed film plays **perfectly lip-synchronized** on any 16mm sound projector! Compact and easy to operate — either from house current or portable power pack — your Cine-Voice outfit is furnished **complete** as illustrated. Standard "C" mount lenses only are optional.

Write D. F. A. for FREE brochure!



Whether for home enjoyment or professional use, the Cine-Voice opens a new world of sound pictures . . . write for **free** Auricon brochure or order from DOWLING'S Fifth Avenue **today!**

Cine-Voice, Single Lens Model, **$695. Cash or $69.50 Down;**
Cine-Voice, 3 Lens Turret Model, **$784.50 Cash or $78.45 Down;**

Auricon Super-1200, 1200' capacity, **$4652.15 Cash or $465.21 Down.**

Just out! All-new Auricon-Pro, 600' capacity model **$1165. Cash or $116.50 Down.**

Schools, Churches and Industrial Users . . .

Please write Industrial Division, DOWLING'S Fifth Avenue for quotations and assistance with your individual problems . . . in sound movie-making or any phase of photography!

1956 Konica II

More quality features than any camera in this price range!

This unusual camera is made to order for the photo fan who is a comparison shopper. Superbly designed, it boasts many features found in only the most expensive cameras. Its precision workmanship is a product of one of the world's oldest and largest manufacturers of fine photographic equipment.

Some of the unique KONICA II features are:

- You only use a single fingertip for focusing.
- You only use one eyepiece for focusing and viewing.
- You get more shutter speeds (9 speeds to 1/500 sec.)
- You get the fastest, finest lens in any camera under $100 (the famous f2.8 Hexanon).

NOW only $89.75 Cash or $8.97 DOWN!

Leather eveready case for KONICA II	$9.75
Autoup (20" to 40")	9.00
Sunshade	1.75

It "pays" to order your new KONICA II **directly** from DOWLING'S Fifth Avenue. Your order will be expertly packed for shipment, with safe arrival guaranteed. Take advantage of our famous Air Service, if time is short. Chances are this will make your new KONICA II not more than a day away—whether you live in Tacoma or Tallahassee! Yes, we are usually "closer" than a local store. Most important: We have it in stock; and your purchase is backed by our unconditional guarantee of satisfaction, or your money back within 30 days. Always shop the **easy** way—the D. F. A. way—by mail! It's a **good** habit!

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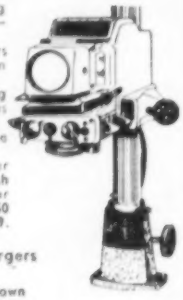
Durst Enlargers

DURST 35mm MICROMAT COLOR ENLARGER



- Automatic focusing for miniature and sub-miniature sizes; also used for micro-copying
- Distortion control—horizontal and vertical—with built-in adjustment lever
- Filter slot for standard color correction filters
- Illuminated scale indicates magnification factors
- Baseboard has power switch, cord and plug
- Patented luminous diaphragm ring makes lens stops visible in darkroom
- Plus many, many other important, exclusive features

COMPLETE MICROMAT unit with Schneider Componon coated 50mm f/4.0 lens **$285. Cash or $28.50 Down**; or with Schneider Componar coated 50mm f/3.5 lens **$265. Cash or $26.50 Down.** Optional: Micro Copy Attachment **$139. Cash or $13.90 Down.**

Other Superb new 1956 DURST Enlargers

Reporter Portable "35" **$ 59.50 Cash or $5.95 Down**
D609 2½ x 3½ Enlarger **119.50 Cash or 11.95 Down**
Unomat Color Enlarger (to 2¼ x 3¼, with lens) **249.50 Cash or 24.95 Down**
Duomat Color Enlarger (to 2½ x 3½, with lens) **375.00 Cash or 37.50 Down**
Laborator 35 (5 x 7) Enlarger and Copy Camera **695.00 Cash or 69.50 Down**

Write DOWLING'S Fifth Avenue **today** for **free** brochure on extraordinary new DURST products. D. F. A. ships all DURST equipment with express and insurance prepaid!

America's Largest and Most Distinguished
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ALPA the ALL-IN-ONE 35mm Camera

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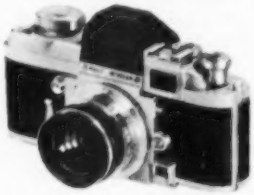

- **Optional Focusing:** Single-lens reflex groundglass or individual, single-window, coupled rangefinder AND multi-focal, "sportstype" viewfinder.
- **Unsurpassed Optics:** Every one of the coated, high-resolving power ALPA lenses (wide angle through 3750mm!) is individually tested, carries an unconditional guarantee. Choice of click stops or FULLY automatic diaphragm with 50mm lenses.
- **Are you a perfectionist? Here's your answer:** The superlative Kern Switar 50mm coated f/1.8 APOCHROMAT, the **only** lens for 35mm cameras correcting all 3 primary colors, including red. Gives critical definition even at full aperture, f/1.8 (200 lines per mm.).
- **Unique Eveready Case:** Holds ALPA with wide angle, 50, 75 or 90mm lens; **plus** sunshade, filters and exposure meter.

Your Choice of Lens Determines Price of Camera

	ALPA 5 (Prism Reflex)	10% Down	ALPA 7 (Prism Reflex & Range-finder)	10% Down
Old Delft Alfinon 50mm coated f/2.8	$309.00	$30.90	$349.00	$34.90
Schneider Xenon 50mm coated f/1.9 with FULLY automatic diaphragm	389.00	38.90	429.00	42.90
Kern Switar 50mm coated f/1.8 APOCHROMAT	419.00	41.90	459.00	45.90

Selected ALPA Accessories

Macrostat Copy & Close-up Stand complete	$139.95
Old Delft Alfinar 38mm coated f/3.5 lens	94.00
Schneider Tele-Xenar 90mm coated f/3.5	124.00
Old Delft Algular 135mm coated f/3.2 lens	139.00
Tewe Telagon 500mm coated f/5.0 lens	548.00
Tewe Telagon 800mm coated f/6.3 lens	998.00
Zoomar Reflektar 1000mm coated f/8.0 lens	1500.00
Zoomar Reflektar 3750mm coated f/25.0 lens	3500.00

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Two-Speed, High-Fidelity TAPE RECORDER

- **Dual speed: 3¾" and 7½" per second**
- **High-fidelity that will delight the most discriminating user**
- **Two-hour playing time**
- **Single knob control for quick, easy operation**
- **Neon record level indicator**
- **Radio-phono-TV input jack**
- **External speaker jack for large audiences, or for ear-phones**
- **Compact, light, attractively styled and sturdy two-toned case**
- **Plus a host of other features usually found only in machines selling for twice the price**
- **Foot pedal stop switch available as accessory**

only $139.95 Cash or

Only $13.95 DOWN

The new **Nikon** S2

with all the features you want in a 35mm camera!

Just Released

- Life-size, combined range-viewfinder
- Luminous composing frame in finder
- Rapid, **single** stroke film transport
- Hi-speed film rewind
- 12 shutter speeds from 1 sec. to 1/1000th sec., plus time and bulb
- Positive synchro selector for all flash bulbs, all shutter speeds; also for electronic flash
- Removable back and fixed take-up spool for easy loading
- Tripod socket built into camera body — avoiding undue strain on base
- Standard PC flash terminal with clip lock
- ¼-turn bayonet lens mount for instant lens interchangeability
- Finger-tip controls all conveniently located on top of camera

NIKON S-2 with famous Nikkor coated f/2.0 lens **$299.50 Cash or $29.95 Down**; or with famous and ultra-fast Nikkor coated f/1.4 lens **$345. Cash or $34.50 Down.** Eveready carrying case **$10.50.**

Nikkor Wide Angle and Telephoto Lenses

25mm f/4.0	$169.50 Cash or $16.95 Down
28mm f/3.5	149.50 Cash or 14.95 Down
35mm f/3.5	89.50 Cash or 8.95 Down
35mm f/2.5	139.50 Cash or 13.95 Down
85mm f/2.0 with sunshade	175.00 Cash or 17.50 Down
85mm f/1.5 with sunshade	299.50 Cash or 29.95 Down
105mm f/2.5 with sunshade	152.50 Cash or 15.25 Down
135mm f/3.5 with sunshade	135.00 Cash or 13.50 Down
Nikkor 135mm f/3.5 for Exakta	$135.00 Cash or 13.50 Down

Write D. F. A. today for FREE Nikon brochure!

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The incomparable new 1956 Leica M-3

Leica M-3 w/ Elmar coated f/3.5 lens $340. Cash or $34.60 Down
Leica M-3 w/ Summicron coated f/2.0 lens 447. Cash or 44.70 Down
Leica M-3 w/ Summarit coated f/1.5 lens 468. Cash or 46.80 Down
Leica M-3 Body without lens 288. Cash or 28.80 Down

LEICA M-3 ACCESSORIES

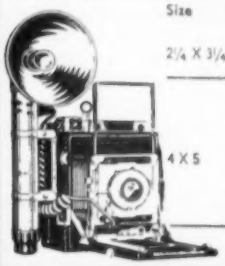
Summaron-M coated 35mm f/3.5 lens	$ 99.00 Cash or	$ 9.90 Down
Elmar-M coated 90mm f/4.0 lens (standard mt.)	93.00 Cash or	9.30 Down
Elmar-M coated 90mm f/4.0 lens (collapsible)	150.00 Cash or	15.00 Down
Hektor-M coated 135mm f/4.5 lens	141.00 Cash or	14.00 Down
Leica Meter-M	30.00 Cash or	3.00 Down
Adapter, standard Leica lenses to M-3	10.50 Cash or	1.05 Down

OTHER SUPERB NEW LEICA PRODUCTS

Stemar (Leica Stereo), complete	$297.00 Cash or	$29.70 Down
Valoy II Enlarger	96.00 Cash or	9.60 Down
Leica IIf with Elmar coated f/3.5 lens	$177.00 Cash or	$17.70 Down
Leica IIf with Summaron coated f/3.5 lens	216.00 Cash or	21.60 Down
Leica IIIf with Elmar coated f/3.5 lens	237.00 Cash or	23.70 Down
Leica IIIf with Summaron coated f/3.5 lens	276.00 Cash or	27.60 Down
Leica IIIf with Summicron coated f/2.0 lens	336.00 Cash or	33.60 Down
Leica IIIf with Summarit coated f/1.5 lens	357.00 Cash or	35.70 Down

1956 Pacemaker GRAPHIC OUTFITS

All brand new, latest models, with factory guarantee! Includes: • Graflok back • Ektalite screen • new Graphic coupled rangefinder with Rangelite and automatic parallax viewfinder • new full image wire finder • Graflite 3 cell flash gun • deluxe case • film pack adapter or roll film holder • 6 cut film holders • adapter ring • sunshade • 4 filters. Prices below include all this extra equipment! Easy payments available!



Size	Coated Lens in Shutter	Speed Graphic	Crown Graphic
2¼ X 3¼	101mm Ektar f/4.5 (1/800 sec.)	$338.	$300.
	105mm Tessar f/3.5	355.	306.
	105mm Ektar f/3.7	343.	294.
4 X 5	135mm Schneider Xenar f/4.7	337.	291.
	135mm Optar f/4.7	354.	305.
	127mm Ektar f/4.7	354.	305.
	135mm Tessar f/4.5	370.	326.
	150mm Schneider Xenar	381.	334.
	150mm Tessar f/4.5	381.	334.
	152mm Ektar f/4.5	371.	327.
	135mm Schneider Xenar f/3.8	388.	344.
	150mm Tessar f/3.5	448.	400.
	150mm Schneider Xenotar f/2.8	568.	524.

New Graphic rangefinder is manufactured for 4 X 5 cameras only. 2¼ X 3¼ outfits are supplied with Kalart coupled rangefinder.

New 1956 Revere 888

Automatic Projector
Runs by itself! Model "553" (300 watt, automatic) $69.50 Cash or $6.95 Down; Model "555" (500 watt, automatic) $79.50 Cash or $7.95 Down; Model "888" (500 watt fully automatic) $119.50 Cash or $11.95 Down.

1956 MINOX III-S

Fabulous! Weighs 2½ ozs.; 3" long. Automatic transport takes 50-exposure film. Built-in flash; 9 speeds to 1/1000th sec.; sharp f/3.5 lens. With case and chain $139.50 Cash or $13.95 Down. Accessory reflex finder $27.50; right-angle finder $14.95.

1956 GRAPHIC 35 Just Out!

Years ahead in modern design and performance! New coupled rangefinder with Push-Button focusing; full flash synch' with Spectramatic settings; Graflar coated f/3.5 lens. Only $77.50 Cash or $7.75 Down. Complete with flash unit and case $89.50 Cash or $8.95 Down.

New 1956 Automatic Kodak VR

With fully automatic diaphragm lens listed: Tessar f/2.8 $259.50 Cash or $25.95 Down; Westagon f/2.0 $289.50 Cash or $28.95 Down; Biotar f/2.0 $345. Cash or $34.50 Down; Xenon f/1.9 $351.70 Cash or $35.17 Down. With Pentaprism R/F add $47. Cash or $4.70 Down.

ALL NEW 1956 RETINA IIIc

Built-in exposure meter and with normal Xenon coated f/2.0 lens in M-X shutter — $185. Cash or $18.50 Down. Optional: Curtar 35mm coated f/5.6 wide angle lens $62.50 Cash or $6.25 Down; Longer 80mm coated f/4.0 telephoto lens $82.50 Cash or $8.25 Down. Retina IIc $135. Cash or $13.50 Down.

new 1956 BESELER Enlargers

Takes negatives from 16mm to 4 X 5 without changing condensers! Has automatic electric motor. 4 X 5 Model $198.75 Cash or $19.87 Down; 5 X 7 Model $239.75 Cash or $23.97 Down.

1956 Linhof Super Technika Cameras

4 X 5 model with multi-focus rangefinder, universal back and 150mm Xenar coated f/4.5 lens $419.70 Cash or $41.97 Down. Linhof 2¼ X 3¼ outfit with multifocus rangefinder and 3 lenses complete $564.15 Cash or $56.41 Down.

1956 POLAROID Land Cameras

Picture in a minute! Sensational NEW Polaroid Highlander $69.95 Cash or $6.95 Down. Speedliner $89.75 Cash or $8.97 Down. Deluxe Pathfinder with coupled rangefinder $249.50 Cash or $24.95 Down.

1956 HASSELBLAD Model "1000-F"

—superlative single lens reflex with 2¼ X 2¼ crisp Ektar coated f/2.8 and speeds to 1/1000th sec.: $379.50 Cash or $37.95 Down. NEW Super-wide Model with 38mm Zeiss Biogon coated f/4.5 lens $489.50 Cash or $48.95 Down.

NEW Models 1956 Rolleis

Rolleiflex with Xenar f/3.5 $217.50 Cash or $21.75 Down; or with Tessar f/3.5 $232.50 Cash or $23.25 Down. Rolleiflex 2.8C, either Xenotar f/2.8 or Zeiss Planar f/2.8 $291.50 Cash or $29.15 Down. Rolleicord V with Xenar f/3.5 $134.55 Cash or $13.45 Down.

new BOLEX H-16 Supreme

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A famous technician solves your problems

I have recently returned from a vacation and have some terrific color pictures I shot with my Medalist on Ektachrome. How can I make black-and-whites in my own darkroom?—R. B. V., Cincinnati, Ohio.

This is a question that comes in every month. It seems to be of great interest, so every year or so, I'm gonna run through it again, though briefly.

In general, there are three major ways to make black-and-white negatives from color film. Simplest, perhaps, is to contact print the transparency and a sheet of panchromatic film in the dark, in a contact printer or a printing frame. Although this is simple to do, I find that you may get dust trouble this way, and since you print emulsion to emulsion, you'll have to remember to print your black-and-white prints through the back of the negative—that is, if you want the black-and-white prints to be straight left-to-right and to appear as the scene really is, you'll have to make the black-and-white prints with the negative emulsion side *away* from the printing paper instead of the usual emulsion-to-emulsion.

Next way to do it, and one that's pretty good, is to put the color transparency in your enlarger and just project it on a sheet of black-and-white panchromatic film which is held flat in your easel, or perhaps in a film holder. I also find you may get dust problems here, that working in the dark with the enlarger is a nuisance, but it does work well.

The thing that I do, because I find it fastest, easiest to work, and giving me greatest control is this: I load a camera with black-and-white film, put the transparencies over a light box, masking off the extraneous light, and use the camera lens and shutter to control the exposure. I've found that any good transparency viewing box is fine. I sometimes use the Graflex Graflarger because it already has a set of masks for different size films. And sometimes I put 35-mm transparencies in my light box and make enlarged black-and-white negatives by using a Graflex roll-film adapter on a view camera. For the writer who has the Medalist, he can use the groundglass back for the Medalist, and one of the close-up lenses.

I prefer a medium-speed panchromatic film, like Supreme or Plux X, and I find that normally pictures made of transparencies tend to be quite contrasty, so I expose fully and underdevelop. Incidentally, if you shoot with the camera or under the enlarger, you'll find that you can dodge or hold back certain areas of the transparency. Recently in copying some small transparencies and enlarging them to larger film, I wanted to hold back the sky and let some of the detail in the foreground shadow areas build up. I took a small piece of black paper, and, keeping it moving all the time, successfully held back the sky while the darker areas were exposed. Sorry to run all this again, but the continuing weight of mail asking for this information seems to indicate that this is a constant problem and of interest.

•

I have some rolls of Agfacolor reversal film which I purchased in Germany. I have not been able to find an Agfa agent or anyone that can give them processing; can you help?—A. T., Oberlin, Ohio.

There have been several places which process Agfacolor, and some of the other foreign films that have been brought in by travelers. The only two places we know of for processing Agfacolor right now is Continental Photo Laboratories, Box 44, San Francisco, California, and K. Mayer, 49 W. 27th Street, New York 1, N. Y.

•

I have heard that you can substitute Ansco Printon for color film and make color prints directly on it. I realize that you must use a mirror to reverse the image, although for my purpose that is not necessary. Would this be suitable for photography out of doors, such as aerial?—K. J. M., Hollis, N. Y.

Yes, Printon has been used quite successfully for making inexpensive direct prints. However, since it is primarily designed for exposure by artificial light, not only would you have to use the proper balancing filters for each emulsion, but a conversion filter as well. I feel that the exposures would be too long for aerial photography, although for outdoor work, on a tripod, with careful concern for the color temperature of the light and proper filtration, it could be used.

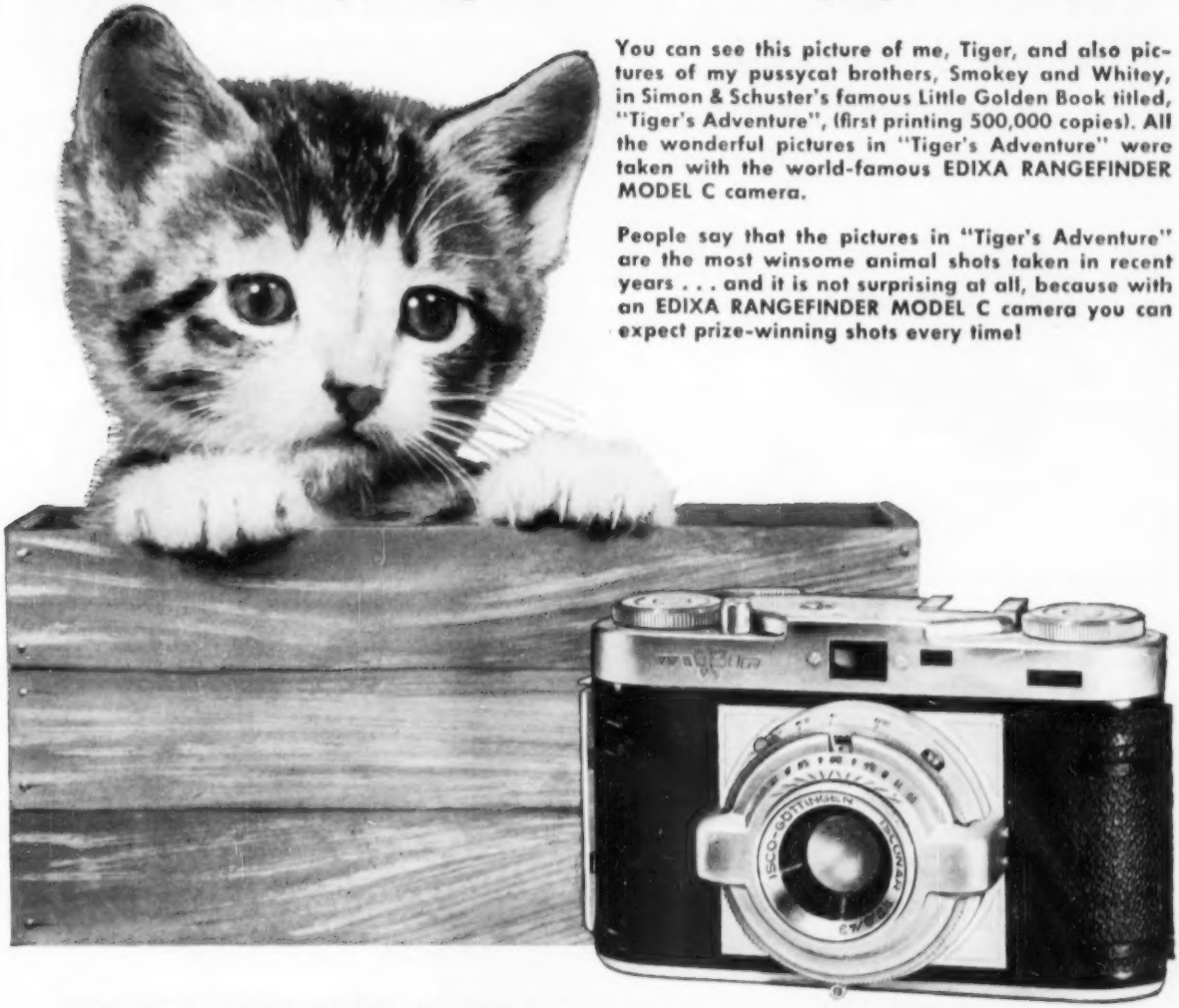
Ansco has a booklet on this subject; write to Product Information Dept., Ansco, Binghamton, N. Y.

•

N. B. of Newburgh, N. Y. writes asking for a complete outline of print making with Printon from a transparency. Sorry, not enough room. Ansco has some good up-to-date easy-to-follow instruction booklets. We only have room to answer questions of general interest. Read our detailed discussion on *Color Prints from Your Transparencies*, page 70 of this issue. Incidentally, if you should write to this column for specific information, such as sources of material, or people who enlarge transparencies, and such, don't forget to enclose a stamped, self-addressed envelope!

Questions of general interest to the color photographer will be answered in this department. However, individual replies can not be given for questions that are not used.—Ed.

500,000 people like my picture!



You can see this picture of me, Tiger, and also pictures of my pussycat brothers, Smokey and Whitey, in Simon & Schuster's famous Little Golden Book titled, "Tiger's Adventure", (first printing 500,000 copies). All the wonderful pictures in "Tiger's Adventure" were taken with the world-famous EDIXA RANGEFINDER MODEL C camera.

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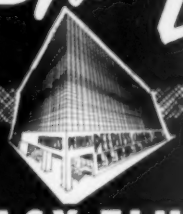

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Contax IIIA f2 Sonnar c*	383.00	189.95
Contax IIIA f1.5 Sonnar c*	412.00	193.95
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Leica IIIC f2 Summitar c		119.95
Leica IIIF f3.5 Elmar c*	237.00	131.95
Leica IIIF f2 Summicron c*	336.00	177.50
Leica IIIF f1.5 Summarit c*	357.00	185.95
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Contax D f2 Biotar P.S. c*	199.00	118.95
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35mm CAMERAS

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Kodak Auto Retina III C f2 Xenon*c	185.00	116.95
Minox IIIS chain & case*	139.50	84.95
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Revere f3.5 RFc*	174.50	73.95
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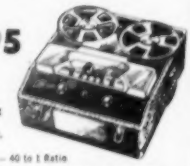

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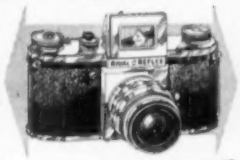

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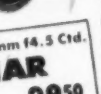

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stereo today

by Robert L. McIntyre

View-Master Circuit Opens

Fans who use the View-Master stereo system, taking 12 x 13-mm transparencies for mounting in disks that hold seven pairs each, have been hard pressed to find ways of participating in international stereo activities. Nearly all are geared to the 1⅝ x 4-inch slide standard, except for a few of the exhibitions. Now there's news of a stereo slide circuit, formed by the Photographic Society of America's stereo division especially for makers of the small transparencies.

The project was initiated by L. B. Dunnigan and James W. Stower, both of Detroit, who handle the division's regular slide circuits. Its director is Hal Morehouse, 2305 10th Street N., Arlington, Va. If you're a View-Master user who has been waiting for an activity like this, Hal will be glad to tell you how you can join PSA and get into one of the first groups. Here's how the circuits work: Each member submits three slides, or in this case three reels, accompanied by a separate sheet of notebook paper telling how each picture was taken. When you get the circuit, you look at all the pictures, write your own comments on the notebook paper for each slide, and read the comments others have written on your own work. Next time around, each member votes on the slides to determine award winners and removes his first set of slides to replace it by a second one.

If you shoot regular 1⅝ x 4 stereo pictures and the circuit idea appeals to you, write to Jim Stower at the *Detroit Times*, 1370 Cass Ave., Detroit 31, Mich. There are over a dozen of these circuits now in operation, with more being formed as demand requires. They provide a fascinating way to learn more about stereo.

Exhibitions Under Way

This is the time of the year when international stereo exhibitions get under way again after a summer lull. Time was when there were only a few competitions that provided stereo classifications; this year there are 16, with a possibility of a few more being added. By entering you can see how your pictures stack up in comparison with the work of fans all over the country. The American shows will take four entries for an almost universal $1 fee. They report on acceptances, and send you a catalog that lists all the accepted slides and their makers. There are ribbons, medal awards, and sometimes cups for the makers of the top pictures. To enter you write for an entry blank and follow the instructions on it.

Here are two of the shows coming up: The Orlando exhibition is of special interest because it has a section for View-Master pictures as well as one for standard stereo slides. For entry blanks write H. W. Wallace, 209 S. Orange Ave., Orlando, Fla. Closing date is October 12. The Chicago Lighthouse for the Blind conducted the first exhibition after the rebirth of stereo in modern form. Its shows now are handled jointly by the Lighthouse and Chicago Stereo Camera Club. Closing date is November 10. For blanks write Henry H. Erskine, 1282 Sherwood Rd., Highland Park, Ill. You'll find other exhibitions that accept stereo slides listed from time to time in the "Calendar of Exhibitions" department of POPULAR PHOTOGRAPHY.

Shutter-cocking Slide-bar

The Kodak stereo camera is designed primarily for simplified shooting, but you also can use it for close-ups and stereo trickery. Intentional double exposures can be made by capping one lens for each shot, while cocking the shutter manually by pushing a cocking lever provided for this purpose. The trouble is, the lever is placed at the bottom of the camera front. Since most pictures that call for using it must be taken with the camera mounted firmly on a tripod, you can hardly get at the cocking lever at the times when you need it most. There's a new slide-bar on the market that provides facilities for shifting the camera to take close-ups with reduced lens separation. It also has an ingenious cocking lever that reaches under the Kodak camera to engage its cocking mechanism when the camera is mounted on the slide-bar. The unit costs $7, is made by Henry Powers, 6411 S. Canterbury Rd., Cleveland 29, Ohio. Powers also makes the trick stereo masking device described in this column in the February, 1954 issue of POPULAR PHOTOGRAPHY. It now costs $9, is used to make multiple exposures within the area of a single slide.

Backward Depth Effects

The folks at Chicago Stereo Camera Club ought to know better, but at a recent competition with over 200 slides entered there were four pictures with a reverse depth effect. Maybe you have encountered the same thing. Stereoscopically, near objects seem far and far things appear near—in conflict with the other depth clues like size and overlapping of distant objects by nearer ones, which of course remain normal. The effect is caused by transposing the pictures of a stereo pair in mounting—by placing the left-eye view where it will be seen by the right eye, and vice versa. When you are viewing projected stereo, you can make pictures like these look right by turning your polarizing spectacles over. This lets each eye see the correct picture instead of the wrong one.

Old-timers spot the defect quickly and are likely to shout "pseudo" when it occurs during a showing. This term is a shortened form of "pseudo-stereo," a word that has come to be applied to the reversed depth. It originally meant a false type of stereo picture produced simply by mounting a pair of identical prints as though they were stereos. No matter what you call it, the effect is one to avoid. If you've got slides that give you a vague feeling of something wrong, analyze them to see if they're mounted backward. It happens often.—

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With Zeiss Tessar f/2.8 lens or Meyer Primoplan f1.9 lens with pre-set diaphragm. At 79.50, this famous, single lens reflex camera is an exceptional "buy" for those who want top performance at low cost.

Special! OPTA-VUE 2 x 2 Slide Viewer
9.95
Now you can hand-view your slides 9 times larger, and with a deep dimensional effect.

Bertram CHROLON EXPOSURE METER
Reg. 22.50 **12.50**
Perfect exposures for beginner and amateur alike. Super-sensitive.

7 x 35 High Precision PRISM BINOCULARS

28.50 Plus 10% Tax
Central focusing plus individual, right ocular adjustment. With genuine pigskin case.

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Famous **PROFILE #141 TRIPOD** List 22.50
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All-aluminum channel construction. 3-inch wide platform holds any type of camera. 3-sections; extends to 60¾ inches, collapses to 25 inches.

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Our lowest price for such top quality and performance. Extends to 48¼ inches. 15¼ inches closed. Rustproof, nickel-plated tubing.

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2¼ x 2¼ Single Lens Reflex
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With Ektar f/2.8 lens. All the famous Hasselblad features — interchangeable lenses, interchangeable magazines, brilliant ground glass focusing, etc.

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electronic flash

Made by Europe's leading manufacturer of electronic flash equipment, BRAUN units have long been favorites of continental photographers. Now this moderately priced unit, which can be used with any "X" synchronized camera, is available to you through your franchised LEICA dealer. Let him show you its many outstanding features, including these BRAUN HOBBY exclusives:

Adjustable Beam Width—Reflector, set at 50° for standard and long-focus lenses, can be changed in an instant to 70° for wide-angle lenses.

Ideal Color Temperature, 5600° K—Gives true color without filters on Daylight color film.

Three Power Sources—Works on dry cell, A.C. or combined A.C. and wet cell. Same lightweight "Polyamid" case houses either power source.

Dimensions	8¾" x 7½" x 2½"
Watt Seconds	100
Guide Number	Daylight Kodachrome—50 ASA 100 films —185
Flash Duration	1/1000th second
Number of Flashes per Battery	Dry Cell—750 or more Wet Cell— 80 per charge
Accessories Available	Connecting cords for various cameras, extension units, camera brackets
Weight with Dry Cell	5 pounds, 2 ounces

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ROLL FILM

	10	20	30
120 or 620 SUPER XX 120 or 620 INFRARED	2.49	4.29	9.95

COLOR ROLL FILM

	3	6	9
120 or 620 EKTACHROME AERO	2.25	4.25	5.50
120 EKTACHROME REGULAR	2.75	5.10	6.75

BANTAM 828

	10	20	30
PLUS X	1.50	2.50	3.00

FILM PACKS

	3	6	12
PLUS X 2¼x3¼	2.95	5.50	10.50
Super XX 4x5	3.75	7.25	13.00

CUT FILM

4x5	50's	100's	150's
SUPER PAN PORTRAIT ORTHO X TRIPLE S PAN TRIPLE S ORTHO COMMERCIAL ORTHO	3.25	6.00	8.75

4x5	20's	40's	60's
ANSCO COLOR DAY. OR TUNG. EKTACHROME DAY. OR TYPE B	5.25	9.75	13.50

5x7	50's	100's	150's
SUPER XX. PAN THIN BASE TRIPLE S PAN THIN BASE	3.50	6.75	9.75

5x7	20's	40's	60's
ANSCO COLOR DAY. OR TUNG.	5.95	11.00	15.50

8x10	50's	100's	150's
SUPER PAN PRESS SUPER PAN PORTRAIT	5.95	11.00	15.50

8x10			
SUPER XX PAN THIN BASE TRIPLE S PAN THIN BASE	4.50	7.95	11.00

8x10			
COMMERCIAL COMMERCIAL ORTHO TRIPLE S ORTHO PROCESS CONTRAST PROCESS PAN	4.35	7.75	10.75

	10's	20's	30's
ANSCO COLOR DAY. OR TUNG. OR EKTACHROME TYPE B	6.50	12.00	17.25

8 mm & 16 mm MOVIE FILM
PROCESSING INCLUDED

8MM x 25' DBL	Ea.	3	6
SOVEREIGN B & W	1.40	3.75	7.25
McGREGOR COLOR DAYLIGHT	2.75	7.50	14.00
SOVEREIGN SUPERSPEED 160 ASA	2.25	6.50	12.00

16MM x 100'	Ea.	3	6
SOVEREIGN B & W or PLUS X	3.00	8.50	16.50
KODACHROME DAY or McGREGOR COLOR DAY	6.50	18.95	36.50
SOVEREIGN SUPERSPEED 160 ASA	5.40	15.00	28.50

16MM x 50' MAGS.			
SOVEREIGN B & W or PLUS X	2.40	6.75	12.75

16mm MOVIE FILM

PROCESSING NOT INCLUDED

	3	6	9
50' INFRARED	1.50	2.75	4.75
EMPTY 16MM MAGS.	1.95	3.50	4.75
50' MAG. PLUS X, XX, NEG.	3.50	6.50	9.00
100' PLUS X, XX, BKGRND. X, NEG.	3.25	6.00	8.50
200' XX NEG.	5.75	10.00	14.50
100' LINAGRAPH PAN OR ORTHO	3.00	5.50	7.50

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GUARANTEED QUALITY

SIZE	TYPE	CONTR.	QUAN.	1 PKG.	2 PKGS.
3x5	DWSM	2, 3	200 SH.	2.25	4.25
5x7	DWSM	2, 3	200 SH.	4.25	8.00
5x7	DWGL	1	200 SH.	2.95	5.50
8x10	SWGL	3	125 SH.	4.25	8.00
8x10	DWGL	2	100 SH.	4.25	8.00
8x10	SWGL	1, 2	100 SH.	3.50	6.50
8x10	DWSM	1, 2, 3	100 SH.	3.75	7.00
8x10	DW CR. WH. LUSTRE	1, 2, 3, 4	100 SH.	4.00	7.50
8x10	DW BROV. VELVET	1, 3, 4	125 SH.	4.75	9.00
8x10	DWSM	1	200 SH.	3.95	7.50
8x10	SWGL	VARIGAM	100 SH.	3.75	7.25
8x10	SW RESISTO RAPID	1, 3	125 SH.	4.25	8.00
10x10	SWSG	VARIGAM	125 SH.	4.00	7.50
11x14	DWGL	2	50 SH.	3.75	7.25
11x14	DW WH. LUSTRE	1, 2, 3, 4,	50 SH.	3.50	6.75
11x14	SWSM	VARIGAM	50 SH.	3.75	7.00
20x24	DWSM	2, 3	50 SH.	8.50	16.00

40"x30' ENLARGING ROLLS

	EACH	2 PKGS.
ANSCO BROVIRA SWGL 1, 2, 3	8.50	16.00
KODABROMIDE DWFS, GS, ES	5.50	10.00
BROMIDE RESISTO RAPID SW 1, 2	6.95	12.25

AERO ENLARGING ROLLS
9⅜" x 200'
No. 1, 2, 3
Wt. 19 Lbs.
2 rolls 6.95

14x17 DEVELOPING TRAYS
WHITE PORCELAIN COATED
$3.95 ea • 3 for 10.95 • 6 for 19.95

35 mm FILM

35MM x 20 EXP. COLOR

	3	6	9
ANSCO DAY. OR TUNG.	3.50	6.50	9.00
AERO EKTACHROME	2.40	4.25	5.50
McGREGOR DAY. or KODACHROME DAY. (PROCESSING INCLUDED)	5.75	11.00	15.75

35MM x 36 EXP. B & W

	5	10	20
Plus X or Microflo	2.00	3.50	5.95

35MM BULK COLOR

	Ea.	3	6
35MM x 28' Ansco Day. #535 (1956)	6.75	18.95	36.00
35MM x 50' Ansco TUNG. #534	7.75	19.95	38.00
35MM x 50' KODACHROME "A"	10.95	28.00	55.00
35MM x 40' AERO EKTACHROME	6.25	17.50	33.00

ABOVE PRICES INCLUDE 12 EMPTY CART. FREE

35MM BLACK & WHITE, FRESH SAFETY

	Ea.	3	6
35MM x 100' PLUS X ANSCO SUPREME INFRARED SUPER XX BACKGROUND X	2.90	7.00	13.50
TRI-X	4.95	14.50	28.00
35MM x 200' PLUS X SUPER XX BACKGROUND X	4.25	11.50	22.00
35MM x 400' PLUS X SUPER XX ANSCO SUPREME	8.00	21.50	40.00

35MM BLACK & WHITE GUARANTEED TO JAN., 1956

35MM x 100'	Each	3	6
LINAGRAPH ORTHO PLUS X LINAGRAPH PAN 250 ASA SUPER XX POSITIVE ANSCO SUPREME MICROFILE TYPE	1.75	4.50	8.50
DUPONT 25 ASA 50 ASA 100 ASA	1.25	3.50	6.75

WRITE FOR SPECIAL QUANTITY DISCOUNT PRICES

35MM DAYLIGHT BULK LOADER
12 EMPTY CART. and 1 GAL. MICRODOL DEVELOPER (WITH PURCHASE OF ANY 35MM FILM) **$5.50**

AERIAL FILM

		Ea.	3	6
5¼"x20'	XX, Triple S Pan	1.50	4.00	7.50
5¼"x20'	Ektachrome w/chem.	9.95	25.00	42.00
5¼"x50'	Ekta. Dup. w/chem.	6.95	18.00	30.00
5½"x26'	XX, Tri-X	1.75	4.50	8.00
5½"x40'	Ekta. Dup. w/chem.	14.75	39.50	70.00
5½"x50'	XX, Tri-X	2.50	6.75	12.00
5½"x100'	XX, Tri-X	5.25	14.50	25.00
7"x18'	XX	1.75	4.75	9.00
7"x18'	Ektachrome w/chem.	9.95	25.00	42.00
7"x62'	Triple S Pan, Tri-X	4.95	13.50	23.50
7"x125'	Tri-X	7.50	20.00	36.50
9½"x40'	Ekta. Dup. w/chem.	9.95	25.00	42.00
9½"x75'	XX, Tri-X	8.75	23.00	42.00
9½"x75'	Infrared	3.50	9.00	16.50
9½"x125'	Tri-X	9.75	24.50	39.75
9½"x200'	XX, Tri-X, SSS Pan.	18.75	52.00	95.00
9½"x390'	XX, Tri-X, SSS Pan.	38.00	100.00	180.00
1½ Gal.	Ekta. Dev. Kit.	3.25	9.00	17.00

CONTACT PAPER
GUARANTEED QUALITY

SIZE	TYPE	CONTR.	QUAN.	1 PKG.	2 PKGS.
1⅞x2¾	SWGL	1, 2, 3, 4	1000 SH.	2.25	4.00
2½x3¼	DWSM	2, 3	1000 SH.	3.50	6.50
4x5	SWGL	2, 3, 4	300 SH.	2.50	4.50
8x10	REFLEX COPY		250 SH.	3.95	7.50
8x10	AD-TYPE	1, 2, 3, 4	250 SH.	3.50	6.50
8x10	DWSM	1, 2, 3, 4	100 SH.	2.50	4.50
10x10	DWSGL	2, 4	250 SH.	4.50	8.50
10x20	DWSGL	2, 4	100 SH.	4.50	8.50
20x24	SWSGL	2, 3, 4	100 SH.	5.25	9.95
20x24	DWSM	2	100 SH.	8.75	16.50

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FULL COLOR
2X ENLARGEMENTS FROM YOUR 35 MM TRANSPARENCIES

SEND 10c
(stamps or coin)
for POLYPIX of striking national award-winning 35 mm transparencies

KLEENSTIK* backed for easy dry mounting on any smooth surface. No messy adhesives.

Illustrations are actual Polypix size

100 REPRODUCTIONS OF EACH TRANSPARENCY $9.95

Strikingly beautiful and faithful reproductions of your favorite 35mm transparency—in *full, glowing lithographed color,* two times enlarged (four times the area)—are now yours in 100 quantities for $9.95, less than ten cents per *Polypix*.

Immediately, a score of new and wonderful uses for your camera are made possible. You *make* and *save* money. You get added returns on your equipment and film investment. You create Christmas cards, wedding pictures, birth announcements, Valentines, Easter, Thanksgiving and other holiday greetings—personalized with *Polypix*.

Commercial and professional uses of this revolutionary new color-reproduction process are unlimited.

Polypix enlargements of your 35mm transparencies are lithographed on lustrous *Kromekote.** They are backed with self-sticking adhesive for quick, easy mounting on any dry surface.

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If your dealer doesn't handle *Polypix*, simply mail a transparency you want reproduced with a card bearing your name and address and the name of your camera dealer. Attach check or money order for $9.95. Mail to *Polypix Company*, 723 South Wells Street, Chicago 7, Illinois. No CODs please. *Satisfaction guaranteed or your money back.*

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Herewith my check for $_____ and _____ 35mm transparencies from which I am to receive 100 lithographed *Polypix* from each transparency, at $9.95 per 100, plus 25 FREE Greeting Cards and matching envelopes, as advertised. Please include _____ additional card packs at $1.00 per pack.

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THE Linhof MULTIFOCUS RANGEFINDER

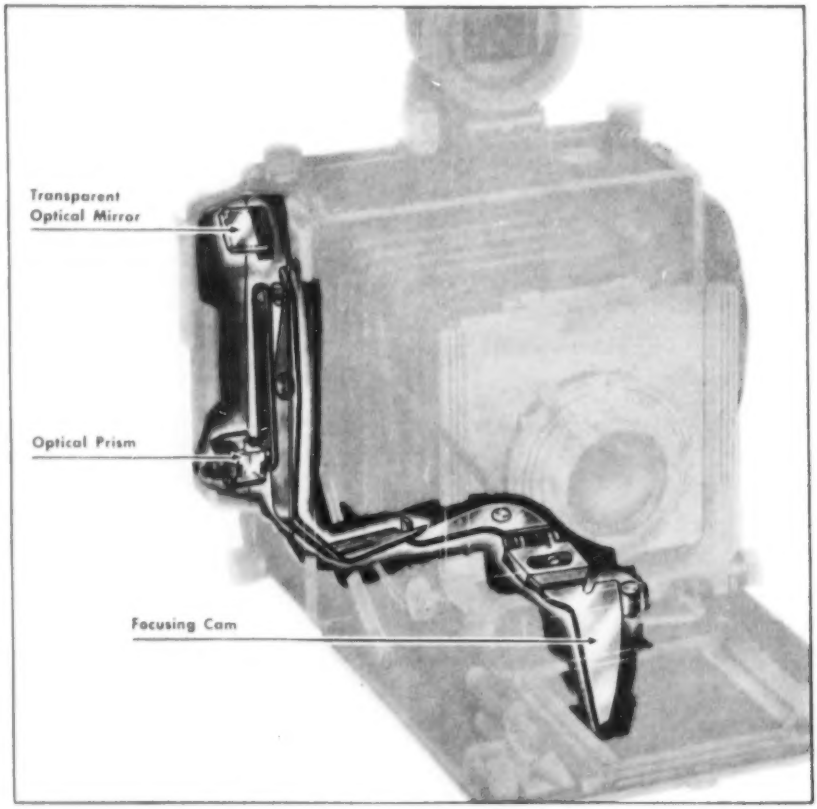
Linhof was first to build a coupled rangefinder into a large-negative camera. And it was designed to couple to as many different lenses as could be used with the Linhof Super Technika, hence the name—Multifocus Rangefinder. Manufactured to the highest precision standards, the Multifocus Rangefinder has not been equalled for accuracy and performance.

Others have attempted to utilize the interchangeable focusing cam—but without achieving the reliability of the Linhof method. One of the secrets is the size of the cam. The smaller a cam, the shorter the curve—and the shorter the curve, the greater the error. Only a large cam, as used by Linhof, can accommodate the precise contours of the lens curve so that the focusing mechanism conforms to the true curve of the specific lens to be used, and tracks accurately at all distances. For example, the Multifocus Rangefinder permits a 15cm lens to be focused to as close as 22 inches.

The Multifocus Rangefinder is only one of the reasons why the Super Technika is called 'the world's most versatile camera'. People will also tell you about the revolving back with its multiple swing and tilt movements, the rising, shifting and tilting lens standard, the triple extension bellows and the many other exclusive features which fit the Super Technika for every possible task in photography. These are all added advantages which you cannot find in any other camera in the field—and which you can enjoy for very little more than the cost of conventional equipment.

Copies of this ad and other Super Technika features, in detail, may be obtained by writing to the address below. Descriptive literature and price information will be included. Please specify 2¼ x 3¼, 4 x 5 or 5 x 7.

See Your LINHOF Dealer for a Super Technika demonstration



The **Optical Prism** offers the advantage of increased image brightness and greater accuracy. This is an exclusive feature of the Linhof Multifocus Rangefinder.

The **Focusing Cams** are made of a specially hard steel. They are extra-large and easily interchangeable. Each is individually precision-ground for the specific lens to be used, and is identified with the lens serial number. Any lens from 90mm to 360mm can be coupled.

The entire linkage system of the Multifocus Rangefinder operates with virtually no 'play' or tolerance — so that the rangefinder responds to the slightest movement of the focusing knob.

Linhof Corporation of America

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"I earned $750.00 on this one baby picture!
YOU TOO CAN MAKE BIG MONEY"

—says *Josef Schneider*

America's top child photographer, who now teaches his amazingly successful methods in his unique Child Photography Course for home study.

Courtesy E. R. Squibb and Sons and its agency Cunningham & Walsh, Inc.

About Your Teacher . . . Josef Schneider has photographed children for Eastman Kodak, Jello, Prudential Life Insurance, Johnson and Johnson, Gerber, Squibb, Playtex. When invited to photograph the young Crown Prince of Sweden, a Swedish magazine called him, "The greatest child photographer in the world." In this home-study course, Schneider is practically at your side, guiding and encouraging you. How can you fail?

"Big fees are paid every day in this richly rewarding field. I learned the hard way. Now I can teach you, step by step, the secrets of taking pictures that bring high pay as private portraits or in commercial advertisements."

Everybody wants good pictures of children. Parents . . . advertising agencies . . . newspapers and magazines—all clamor for really striking child photographs. Child photography is *big business!* A money-maker! Bound to grow as the U. S. birth-rate goes up, up, up! In no other field we know of can you *earn so much*, in *so little time*, with *so little equipment!*

YET REALLY GOOD CHILD PHOTOGRAPHERS ARE SCARCE! Opportunity is wide open to men and women who know the secrets this course will teach you. Josef Schneider has worked out his own rapid, dramatic, sure-fire methods. He will pass these secrets on to you, in plain words and hundreds of vivid pictures, in his new home-study Child Photography Course.

IN TEN FASCINATING LESSONS HE WILL TEACH YOU:

How to place lights that glorify but don't glare and scare.
How to turn the "NO" of a balky baby into "Do it again, man."
How to inject action, mood, fresh ideas, into your pictures.
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☐ Send free catalog describing how Child Photography Course can increase my earnings.

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Address.....

City.....Zone.....State.....

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4 x 5 CUT FILM

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ANSCO TRI-S	75 shts	3.98
SUPER XX, Pan	75 shts	3.98
ORTHO-X	75 shts	3.98
HI-SPEED PAN		
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DuPont Sup ƒ2	1.25
Background X	1.25
Kodak Tri-X	2.25
Kodak Plus X	1.50
Kodak Positive	1.75
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35¢ post & ins

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20 exposure cartridges. You save because they're reloads. Guaranteed 'til Feb. '56. Each . . . . . 10¢ P. P. **89¢**
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35mm x 20 Exposures
You save because this is resposoled from Super Speed Aero Ektachrome. 4 times faster than Kodachrome. Specify daylight or Tungsten. Guaranteed 'til Feb. '56.
5 CARTRIDGES 55¢ P. P. **3.98**

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TRI-X 10 Rolls **1.98**
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Shoot in the dark. Do the unusual!

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Add 25¢ post & ins on order
All roll film Jan '56 date

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Hi-Speed or Reg SW, SM (A) 250 sheets **7.50**
85¢ post & ins

11 x 14 VARIGAM

Hi-Speed SW, SG 50 sheets **3.75**
100—7.25
85¢ post & ins

16mm MOVIE FILM

100 ft Rolls Super X, Super XX, Reg. 8.10 each **3.95**
3 for 10.50
With free • Eastman Kodak Processing, 15¢ each post & ins

16mm MOVIE FILM

50 ft. MAGAZINE Super X, Super XX, Reg. 6.10 each **2.39**
3 for 6.95
With FREE • Eastman Kodak Processing, 15¢ each post & ins

8 x 10 BROMIDE

Enlarging paper Single wt, glossy F1, F2, F3 100 sheets **3.29**
85¢ post & ins

8 x 10 BROMIDE

Enlarging paper Sing wt, Semi-Matte ƒ2, 3 100 sheets **2.69**
85¢ post & ins

11x14 ENLARGING

Double weight, Matte lustre ƒ 2, 3, 4 50 sheets **3.50**
85¢ post & ins

9⅜x200' PAPER

Enlarging, single weight, semi-matte, '54 date; ƒ1, 2, 3 per roll 1.00 post & ins **3.95**
12 rolls Asst grades 45.40

SPEED TELE LENS

1½" f1.9
COATED
For all 8mm cameras (specify). Click stops, coated optics. Focusing mount. 3x magnification.
Brand-New **17.95**
65¢ post & ins

6mm f1.9 Wide Angle (8mm) 24.95
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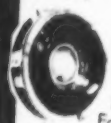
3" f1.9 (for 16mm) 27.50

WORLD FAMOUS 4 x 5 WIDE ANGLE



100mm f6.3
Meyer coated
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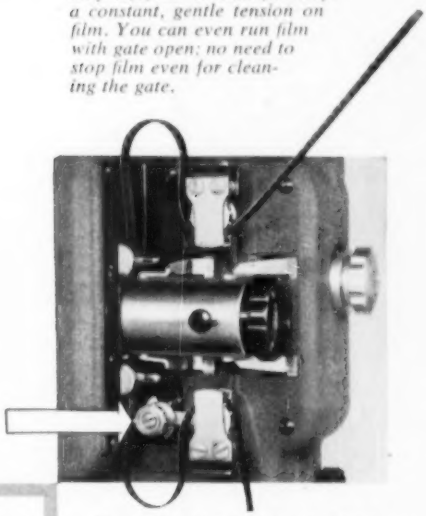

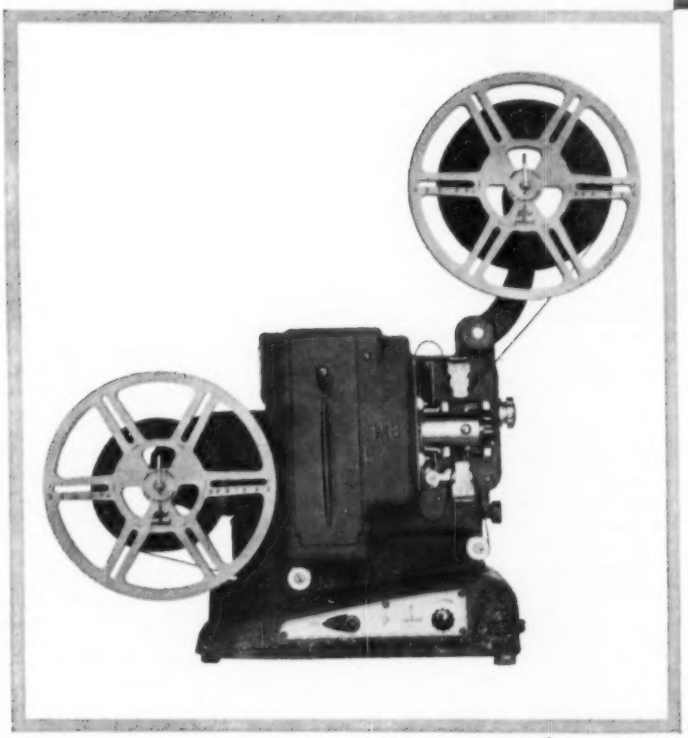

The Bolex M-8 is the only 8 mm movie projector with FilmGuard TM protection. *No other projector has it!* FilmGuard ensures that the loss of the loop can never damage your precious and irreplaceable footage. When the loop is lost, or if the gate is opened while the film is running, the film engages the FilmGuard. This device keeps a gentle, even tension on the film, and the gate may be cleaned without stopping the film. In no case do you need to stop the showing in order to make a new loop.

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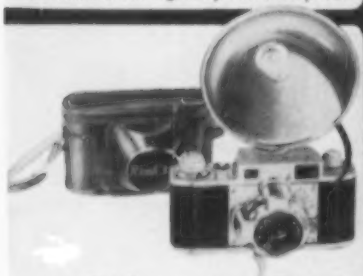

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camera clubs

by Whit Hillyer

Here We Go Again

The Faithful who gather with me here each month know that I believe photography is—or can be—a true art form. I've battled the opposition in this corner repeatedly.

But it's not easy to defend the position when I see what I've defended as an art form turned into a production-line affair. Yes, I'm off again, unwillingly creating enemies, I fear, among those who (except for this one failing) are most active in advancing amateur photography in these United States. It's a kind of chain reaction. First comes the *PSA Journal* issue in which are listed the "Who's Who" people. Then, a month or two later, I get the camera club bulletins in which the local groups go ga-ga about their members who have made one of these Charmed Circles. Breathlessly the club-bulletin editors rush into print with the stop-press news that Joe Doakes won national recognition for having had 18 slides accepted in 10 shows, while Susie Whoosis crashed the pictorial elite with 16 prints in 12 shows.

Mind you, I'm not taking a thing away from Joe and Susie, who have turned out some really good work and who had the enterprise to enter it in competition. That part's fine. My beef still is against The System which keeps this premium on quantity. The fact that Elmer Spelvin made *one* excellent picture last year is, in my opinion, just as important, because Elmer's a busy guy. He's just as capable a photographer as Joe and Susie, and he gives it all he can.

Let me quote to you a few sentences from an article entitled "Color Division Policy on Who's Who," by my respected friend H. J. Johnson. It appeared in the *PSA Journal* for September 1951. "Those who do not have to work," wrote H. J., "can go back tomorrow when the lighting is right. . . . Those who work for themselves may leave at any time . . . and not have to wait until the week-end. . . . Statistical tables may prove that such a one has more acceptances. . . . but they will not prove that he is a better photographer. . . ."

Johnson then goes on to say that the purpose of Who's Who in Color "is only to list those whose slide-making ability is probably above average . . . we do not intend to get involved in what degree above average."

Now, this present column is not intended to involve Hubert Johnson, whose hard work and good sense are internationally recognized. (Step down, H. J.—and thanks.) I just mentioned the 1951 article to show that in those days the Who's Who thing (in Color Division, at least) still had some feet-on-the-ground thinking connected with it. In the meanwhile, the whole Charmed Circle routine has gone into an upward spiral, as could have been predicted. Seems a pity, too. Why can't we simply make pictures to the best of our ability, enter them in competition, and let it go at that? Look—if our boy Joe has the leisure, and the money (for film, salon fees, and the rest of it), *and* the ability to bat out really fine pictures in dozen lots, he's just naturally going to get a well-earned reputation anyhow. So why must we make up a form sheet on Joe and Susie? Why set it all down in cold type annually?

Certainly we expect a fanfare and headlines when a factory turns out a record number of fine products during the year. But that's a business. It's not art.

So long as organized amateur photography in America continues to formally honor its devotees for quantity, we'll never be considered seriously in esthetic circles, either long-hair or *avant-garde*. Perhaps a majority of us don't want to be, or don't care much either way. Perhaps most of us really prefer to make quantity just as important as quality. I suspect this is it—but I don't want to give up just yet.

So I've popped off again. And—as on previous occasions—I'll give the floor to the first one to come up with a sincere and logical reply to the basic question, which is: Can it be Art when you have one hand on the adding machine?

Shigeta to Lead Japan Tour

A limited group of amateur photographers will experience an unparalleled treat in October, when Harry Shigeta takes them on a photographic tour of Japan. The three-week sojourn will include a two-day stopover in Hawaii, where the *F/16 Cameralists* will take over as hosts. In Japan the emphasis will be placed on locations ordinarily beyond the reach of tourists. The trip will be a triumphal return of Shigeta and his charming wife to their native land. Always a patient friend of the amateur, Harry is among the world's finest photographers and has been conspicuously successful in commercial work in Chicago.

By the time you read this, chances are that the tour roster will have been filled. But there may still be a few vacancies, and if you're interested, drop a line to Harry Shigeta, Shigeta-Wright Studios, 1721 North Wells St., Chicago 14, Ill.

Postal Clubs Interest British

A recent letter from the *Half-Plate Postal Club* in England gives interesting details on how the organization functions. ("Half-plate" denotes a popular British negative size, 4¾x6½ in. Full-plate is 6½x8½ in., making the true half plate 4¼x6½ in.—but the latter is known as *double* quarter-plate. Oh, never mind!)

The club is composed of circles in various parts of the British Isles. Each month every circle member sends a print direct to his circle secretary, who assembles the lot in a folio. As the folio

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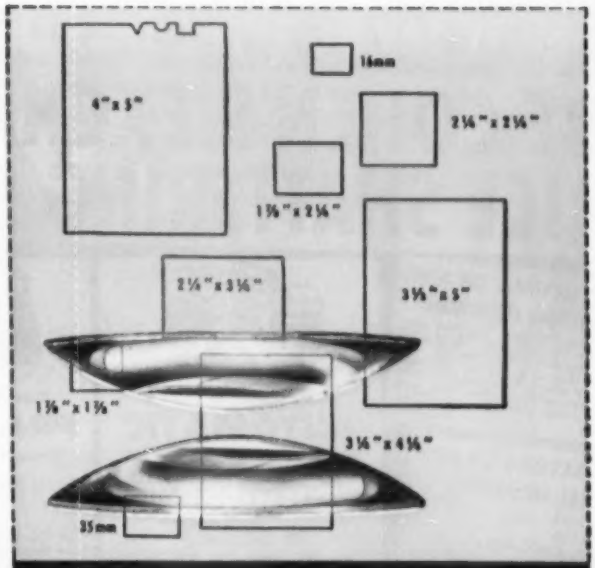

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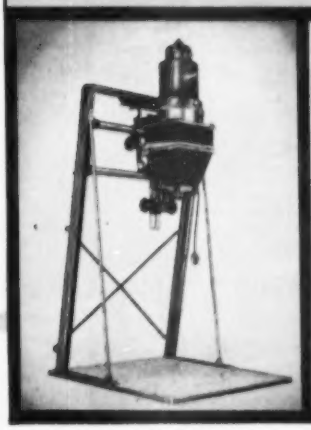
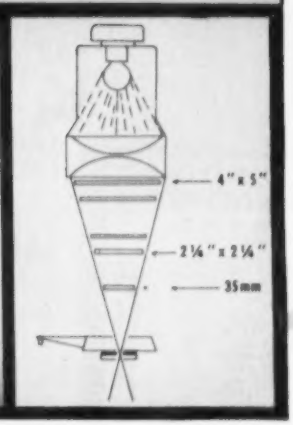
Whatever the size, whatever the position, each negative is flooded with a flat even field of illumination, without hot spots.





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makes the rounds, by mail, each member votes on the prints and enters comments regarding them in the notebook which accompanies the folio.

Half-Plate club's annual traveling exhibition is composed of roughly 90 prints chosen from work submitted by members (limit is six entries per member). The road show circulates throughout the islands from November to June, and there's a growing waiting list of clubs requesting to see it. After the prints complete their journey, they are sent out in batches to the various circles. This enables members who live in remote localities to inspect the prints in their own homes, at their leisure.

Half-Plate Postal Club puts out a very high-grade printed publication, "Photonews." Any reader desiring further details pertaining to the club or its activities can write to Ellis C. Martin, 18 Hill View, Henleaze, Bristol, 9, England.

Correspondence Wanted

Have your club secretary drop a line to the following groups, all of which would like to hear from you:

Yantacaw Camera Club, Horace M. Guthman, president, 217 Park Ave., Passaic, N. J.

Ashland Camera Club, Mrs. Ann Geise, secretary, 212 Brock St., Ashland, Pa.

Westover Camera Club, T/Sgt Harold L. Craven, Office of Information Services, 4050th Air Base Group, Westover Air Base, Mass.

Case Camera Club, Ludwig Keck, Case Institute of Technology, Cleveland 6, Ohio.

Powder River Camera Club, Baker, Ore.

Morrison Camera Club, G. Walter Zerr, Morrison, Ill.

Photographic Society of Miami, Hy Hatowski, secretary, 3717 Chase Ave., Miami Beach 40, Fla.

Kings Camera Club, Gene Edwards, P.O. Box 298, Hanford, Calif.

We hear that *Photo Guild of Baltimore* finds model night a big drawing card. Also, the *Guild* meets every week the year around. Tried skipping summer meetings one year, found it too hard to get going again in the fall. Club address is 26 S. Broadway, Baltimore 31, Md.

President Joseph R. Carbonell wants you to know that *Pfizer Camera Club* has a new mailing address. Now you write this gang of Charles Pfizer employees in care of Joe himself at 90-11—107th Avenue, Ozone Park 17, N. Y.

Tri-State Council of Camera Clubs, mentioned here not long since, continues onward and upward. Now they're sponsoring the Third International PSA Stereo exhibition in September. If you want to correspond the man is Ralph Reasoner, R.D. No. 2, Steubenville, Ohio.

Fort Worth Cinema Club meets at the Fort Worth Art Center every third Thursday at 7:30 P. M. (December excepted). Correspondent is August Bartholet, 1618 S. Jennings, Fort Worth 4, Tex.

Is your club on our mailing list? If not, please send name and address to: POPULAR PHOTOGRAPHY, Department 307, 366 Madison Ave., New York 17, N. Y.

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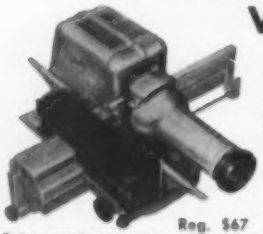

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Land
CAMERA

You've heard a lot about the remarkable camera that develops and prints its own pictures. Maybe you've even used it—and known the thrill of holding the print in your hand one minute after you've snapped the shutter. Now, with a new high-speed film just announced, the Polaroid Land Camera not only gives you finished pictures in 60 seconds—but pictures as fine as any you've ever taken! Here are the facts: **1. The new film gives you unusually sharp, clear prints.** Details you might scarcely notice with your naked eye—blades of grass, a fluffy cloud—seem to spring to life on the finished print. Even if one side of your subject is in brilliant sunlight and the other in shadow, you'll get good detail in both light and dark areas. With the new Polaroid PolaPan Land Film, the camera captures perfectly the subtlest variations of tone and texture. **2. Skin tones look softer, more flattering** with this new panchromatic film. It subdues freckles and blemishes. Lipstick never comes out black. You get prints with greater depth, more warmth and richness. There's no finer film for taking really beautiful photographs of babies and women. **3. You can take many indoor shots without flash** with new Polaroid PolaPan. You can shoot in only one-fourth the light you used to need. This new film is so much faster* you can take many pictures indoors with natural daylight . . . shoot excellent pictures on the grayest day, even in the rain . . . get superb portraits with a single 150 watt bulb in an ordinary bridge lamp (see below). **4. Your precious prints will last.** Baby pictures, priceless vacation shots, family portraits are yours for a lifetime; they'll last just like any fine prints. **5. The new film's wider latitude corrects your exposure errors.** You can make quick judgments safely because this film gives you much more leeway in exposure. **6. Copies and enlargements are better than ever,** because of the magnificent detail you get in the original print. **7. You see your results right on the spot.** You set one dial—which automatically selects the right shutter speed and lens combination—and you're ready to shoot. 60 seconds later you've got a finished picture. (You'll economize with the Polaroid Land Camera too, because you don't *have* to shoot up a whole roll just to get at one or two pictures you really want to see.) **8. There are models to fit any budget.** You can now buy a Polaroid Land Camera for as little as $1.19 a week. This new low price means now *you* can enjoy the exciting, creative kind of picture-taking that only this camera, only this new film can give you. The facts make it clear. This is the time for *you* to buy a Polaroid Land Camera.

*EXPOSURE INDEX 400 — ASA EQUIVALENT

These pictures were taken with a Polaroid Land Camera • POLAROID CORPORATION, CAMBRIDGE, MASS.

Take great pictures day or

PACEMAKER GRAPHIC®

Day or night, in color or black and white, for pleasure or profit, the most productive combination you can own is the Pacemaker Graphic with Stroboflash. The amazing versatility of the Pacemaker Graphic enables you to break photographic barriers. With it you can make action shots, portraits, close-ups, copies, wide angle interiors, brilliant close-ups of distant subjects, pictorials, ultra close-ups, photo-micrography and other types of specialized picture-taking. If you're interested in taking pictures like the professionals, own a Pacemaker Graphic 45 equipped with electronic Stroboflash.

night in color or black and white with and STROBOFLASH!

STROBOFLASH . . . Finest electronic flash ever made

For night shots or daylight fill-in flash, Stroboflash offers the most convenient and dependable portable lighting available. It eliminates bulb changing, hot spots and cumbersome lighting equipment. You'll like the results of its softer, less glaring type of lighting and its economical operation. You have a choice of three models: Stroboflash I has a flash duration of 1/1400 second; Stroboflash II has a flash duration of 1/1000 second; Stroboflash III, most powerful of the three, produces twice the light and has a flash duration of 1/500 second.

NEW GRAPHIC RANGEFINDER WITH INTERCHANGEABLE CAMS MATCHES ANY FOCAL LENGTH GRAPHIC LENS!

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candid shots by the Editors

Got Your ANNUAL Yet?

The 1956 edition of *Photography* ANNUAL went on sale in August, and copies are disappearing from newsstand counters at a great rate. If you don't already have one, you'd better slip down to your newsdealer, palm him a buck, and nod in the direction of that smart gold-bound book. The editors of POPULAR PHOTOGRAPHY who selected the 230-odd photographs for the ANNUAL, are convinced (as they are every year, of course) that the 1956 volume is better than any before it, and well justifies the claim that it's "A Selection of the World's Greatest Photographs."

TV and You, by One Who Knows

Chester Burger, who wrote *Cover Your Town for TV*, on page 66 of this issue, is a man who knows the television news

Chet Burger on the job.

business from years of first-hand experience. He was formerly the National Newsfilm Manager of CBS Television, and is an ex-president of the Radio-Newsreel-Television Press Association of New York, Inc. Now he is a television specialist with the New York public-relations firm of Ruder and Finn. Our picture was taken while Burger was directing coverage of the Army cold-weather maneuvers during "Operation Snowstorm."

Another Moon Picture

Supplementing our interesting picture section titled *Moon Pictures*, elsewhere in this issue, here is another one we came across recently. It has the look of a studio glamour portrait, but it was actually made by moonlight alone—"a full Florida moon," we are assured. It is the work of Thomas A. Eure of Tampa; his model was lovely Franzella Smith. He used a 35-mm camera loaded with Plus-X, and exposure was 12 seconds at *f*/2. And how would you go about focusing with a

Franzella by moonlight.

rangefinder by the light of the moon? It wasn't bright enough for Eure, so he used a flashlight! Maybe after you've looked at the rest of our moon pictures, you'll be ready to try something like this. . . . *if* you can find a pretty girl who will sit still for 12 seconds.

It's PSA Convention Month

The 1955 convention of the Photographic Society of America will be held October 5 to 8, in Boston. Members who arrive a day early will be able to participate in an all-day picture-taking field trip to Plymouth, Mass., landing place of the Pilgrims. A traditional event of the four-day meeting is the Awards Banquet, and this year in addition to the usual honors and presentations, winners of two new contests will be announced: the Industrial Editor's competition for "best use of photography," and the PSA-*Life* photo-essay contest. Congratulations in advance to the winners, and may the PSA enjoy itself in the home of bean and cod!

Flash in the Sky

They've found still another use for flashbulbs: taking pictures of jet planes in flight! Think an ordinary flashbulb wouldn't stop a jet? Well, it would if you were shooting from another jet flying alongside at the same speed. That's what James Burns did for General Electric to get a remarkable set of pictures for the flashbulb manufacturers, some made with only a single M2 bulb, and some with multiple flash units. Burns rode in a jet trainer, at its top speed of 350 mph, and the F86-D which was his "target" had to slow to half its own normal speed to stay within shooting range. The picture we reproduce, one of those made with just one of the world's smallest bulbs, was taken when Burns' plane was 60 feet from the fighter. What looks like a string of baseballs emerging from the plane's tail is really the discharge from the jet afterburner, never before photographed in the air. Burns used Tri-X film in a Leica, and exposure was 1/25 second at *f*/3.5. Shows what any amateur can do with simple equipment—and the right connections!

Jet-to-jet flash, 350 mph.

Silver Anniversary for Eisenstaedt

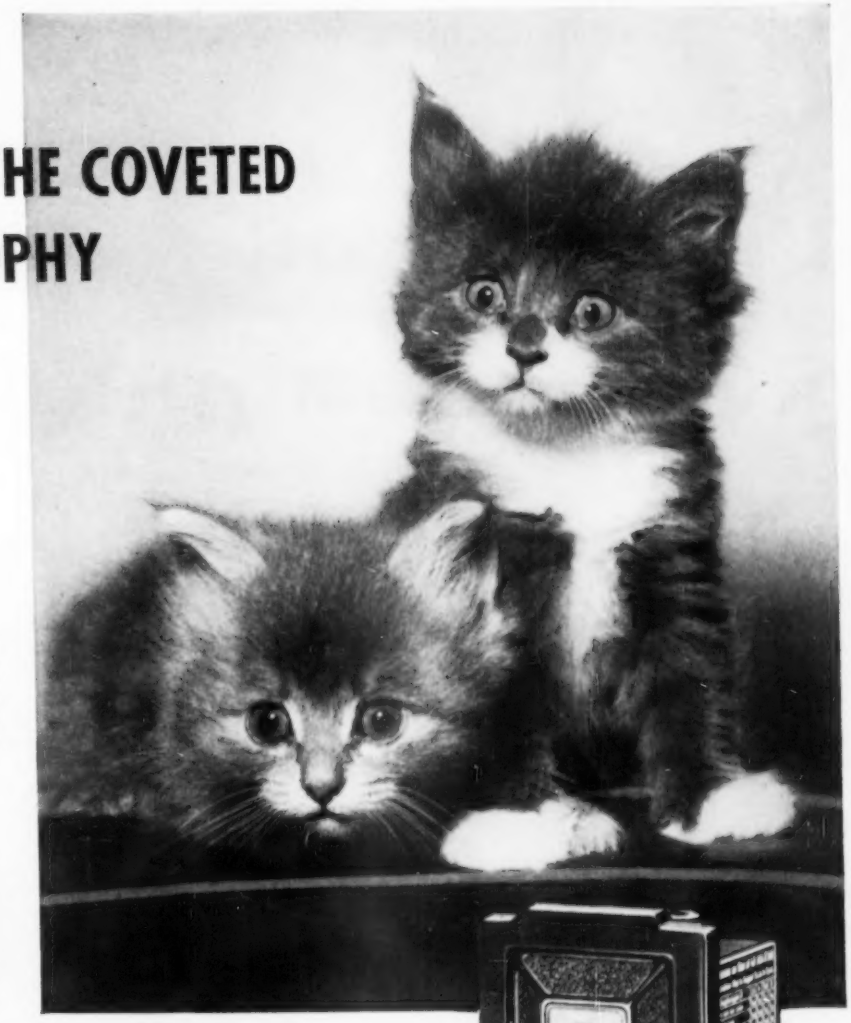
This year marks Alfred Eisenstaedt's 25th year as a professional photojournalist-at-large, first in Germany, later in this country as one of the first four staffers on *Life* magazine. In honor of this noteworthy milestone, an exhibit of his most memorable pictures was displayed earlier this year at the George Eastman House in Rochester, and a traveling edition of the same show is now touring the United States. In this issue, starting on page 82, you'll find a generous selection of

Photo by Eliot Elisofon, courtesy *Life*, © Time, Inc.

"Eisie"—a quarter century with a camera.

photographs from the show in a 14-page retrospective portfolio. The pictures range in time from a 1928 available-light portrait of Marlene Dietrich to a 1952 shot of gambler Frank Costello (also by available light). When asked to define his work in a recent interview with POPULAR PHOTOGRAPHY, Eisenstaedt said, "I'm some kind of a news-feature photographer. You have to be very fast and should not be too much bothered with technique." Plans for the next 25 years? To keep on shooting.—▶

WINNER OF THE COVETED BALLARD TROPHY



This charming Ikoflex picture, taken by John Barras Walker, AIBP, ARPS, won the Ballard Trophy for the best animal shot submitted from all Canada in the Eighth National Print Show of the Commercial and Press Photographers' Association of Canada.

ZEISS IKON

IKOFLEX

Pictures taken with the Ikoflex speak eloquently for this fine 2¼ x 2¼" twin-lens reflex.

Ikoflex has everything you need for fast, accurate shooting. And the superior quality of its famed Zeiss Tessar taking lens and other optical parts assures splendid results in color or black-and-white.

The Extrabrite focusing screen is remarkably brilliant—a great aid in achieving pin-point focusing, particularly in poor light. A 4x magnifier and direct sports finder are incorporated in the focusing hood. And an accessory Prismatic Finder permits sighting on ground glass at eye-level—shows image right-side-up and unreversed.

Model II-a has automatic shutter-cocking film transport and the Zeiss Tessar f/3.5 lens in Synchro Compur shutter with speeds to 1/500. $126. Case extra. Model I-a has Prontor SV shutter with speeds to 1/300 and Zeiss Tessar f/3.5 lens. $96. Case extra.

See Ikoflex I-a and II-a at leading dealers. Write for literature.

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MADE IN WEST GERMANY

The Photography Editor of the *New York Post* sounds off on a controversial subject

I'm sick of available-light photography!

By John Adam Knight

I DON'T know how others feel about it, but I'm getting pretty sick of the current overemphasis on available-light photography.

Mind you, I have no prejudice against this kind of picture-making. In fact, I have been doing it myself for some thirty years. What riles me is the exaggerated importance it has acquired during the last few years.

This undue emphasis confuses the young photographer and may cause him to get a false perspective on the craft. He may be persuaded that dim-light photography is the highest possible achievement, that no other type of work is important or worth doing. If so, his self-education will be curtailed. He will neglect to explore far broader and more productive approaches to picture-making. And the narrowness of his operations will limit his output to prints that are not understood or appreciated by his family and friends. They won't understand why his pictures have to be so dark and speckled while those they make in the park on Sunday are bright and smooth. Eventually he may become discouraged and give up photography altogether.

This intense concentration on low-light photography is, of course, only a passing craze, but I wish it would hurry and pass. We went through the same feverish phase back in 1936 when a 35-mm film with the then miraculous speed of 64 Weston first came out. I remember how proud I felt when I made a recognizable picture of my girl friend in the middle of Times Square on the night when Franklin D. Roosevelt was first re-elected.

But we got over the craze sooner. We were not encouraged by the magazines and museums. They very wisely said: "Yours is a remarkable achievement. Thanks to a fast lens and fast film, you have created a photographic image under lighting conditions that would have made such a thing impossible a year ago. But aside from its technical triumph, your picture has little to recommend it. It has little esthetic or commercial value, and we will not buy or print it."

If this yardstick were to be applied to the available-light pictures seen in print in recent years, how many of them would survive? Most of those I have seen appeared to be no more than technical *tours de force*, made for the sake of the handicaps to be overcome, and chosen for publication because they were hard to make. That's the way they looked to me, at any rate.

When a picture is made by available light because it is a picture eminently worth making, and no other light can be added, then the result is quite different. People who have no idea how or when they were made are thrilled to this day by Dr. Erich Salomon's pioneering candid pictures made by available light in the late 1920's. Universal admiration is also accorded to some of the excellent contemporary available-light photographs made by Alfred Eisenstaedt, Ed Feingersh, Adrian Siegel, Leonard McCombe, Doisneau, and various others.

Until the introduction of new ultra-fast films early this year, most of the published available-light photographs had one other thing in common: they were intolerably and excusably grainy. And already some of the available-light boys have found a way to produce pictures with the new films that are almost as grainy as those of other years. They do this by what they call "forced development," which arouses the suspicion that they have not bothered to learn the fundamental principles of the process by which they hope to earn a living, or to garner praise as amateurs.

The very bedrock of the photographic process is this unalterable rule: Density is the end product of exposure, contrast is the end product of development.

Total development, in the true scientific sense of the term, occurs when all the grains of silver halide that have been exposed to light have been reduced to metallic silver. This will produce true "gamma infinity," the greatest possible degree of negative contrast in comparison with the contrast of the subject.

The time required for this will vary according to the nature of the developer, the type of film, the temperature, and the exposure. But it will never, under any circumstances I can imagine, call for leaving a roll of film in any ordinary developer overnight, or for any development period running into hours. A good enough rule of thumb is: Total development requires about four times as long as the normal development recommended by the manufacturer. With some developers this period may be considerably longer or shorter.

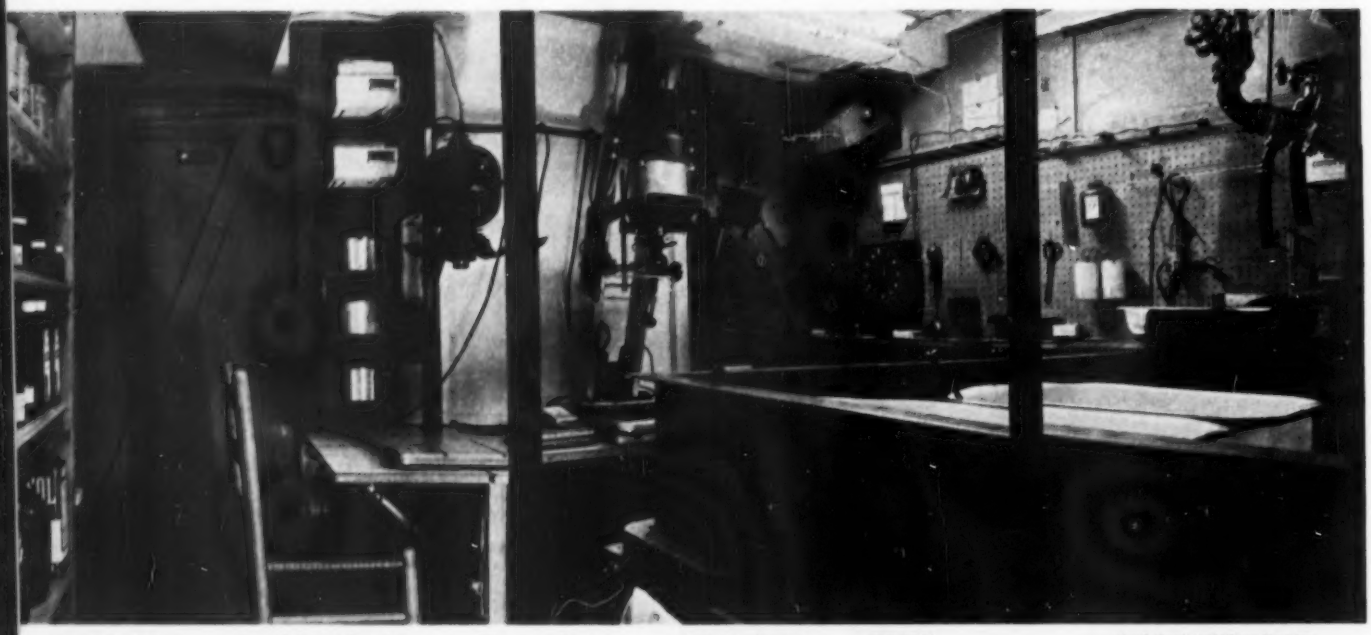
If film is left in the developer after all exposed silver grains have been reduced, the developing agent then will contact with those already reduced, thus begin to act (*Continued on page* 151)

See page 151 for further discussion of intensification

John Adam Knight says he's tired of available-light shots like this by Allan Ludwig, who shot Super-XX at ASA 800 and forced development.

Do-it-yourself

Here is a four-wall view of print room



chemical shelves

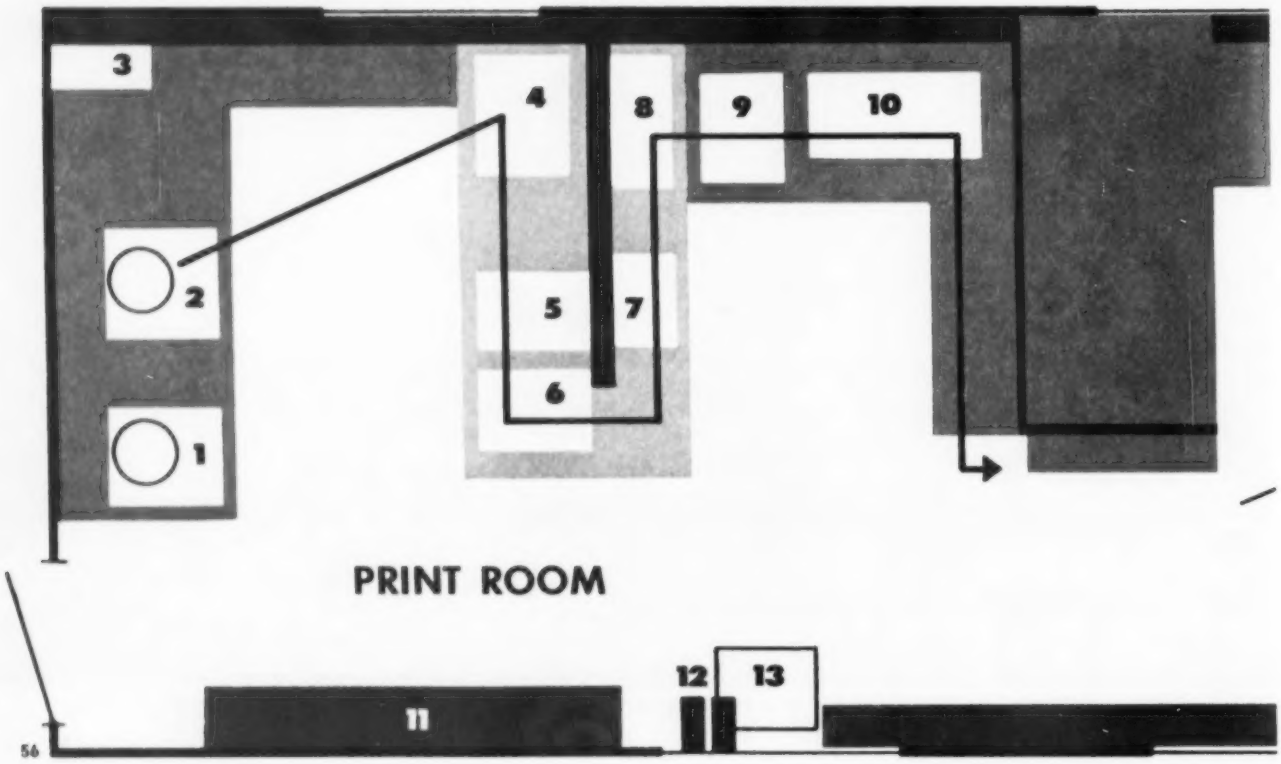
to-print negative box
finished negative box
condensers

35-mm enlarger
120 and 4x5 enlarger

enlarger lenses
negative carriers

safelight
timer
Varigam filters
note pads

electrical solution heater
developer tray
hypo trays



darkroom

By JOSEPHINE VON MIKLOS

Photographs by the author

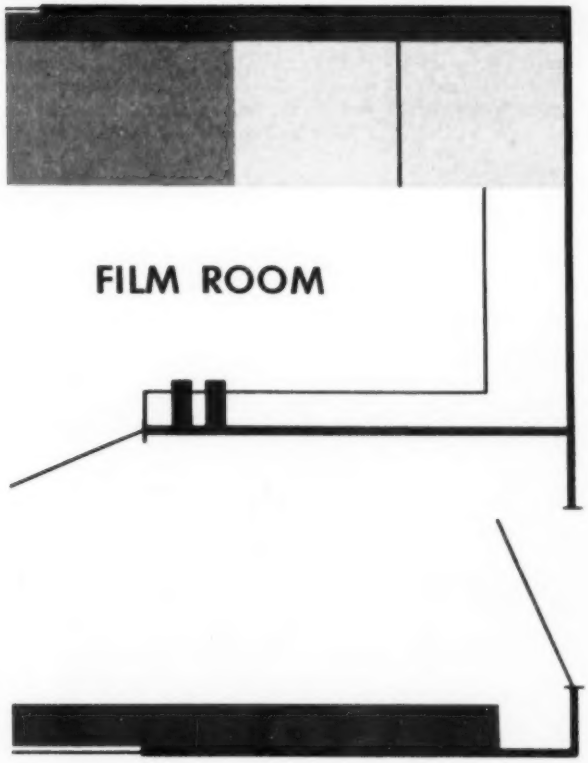
The current trend toward do-it-yourself has placed hundreds of items and kits on the market that can be utilized by both the amateur and the professional photographer in building or improving his darkroom. Before starting to convert my basement into a two-room darkroom, I studied for some time the various

water outlets
print squeegee
washer
water timer

print wringer
dryer timer

dryer
supply storage

directions for all equipment
towel
pencil sharpener
storage space

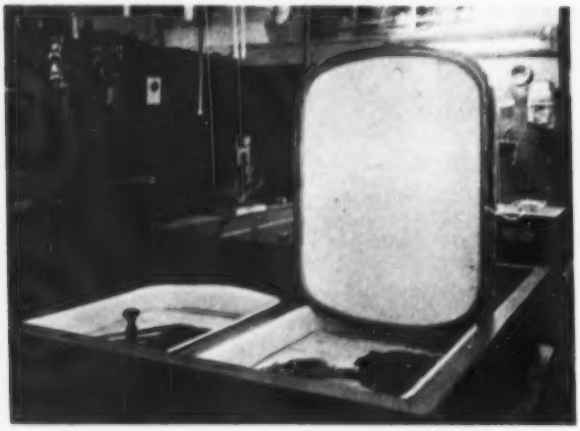


Floor plan shows how darkroom is divided into print room and film room. (For full details on film room turn to page 60.) Layout was designed so a minimum of effort and movement would be required in making print. First, print is made with either (1) the 35-mm enlarger, or (2) the Omega enlarger, or (3) contact printer. It is placed in (4) developer tray, and then put through two (5 and 6) hypo trays. Next it goes into (7) BFI 30 (hypo neutralizer), and washed in (8) wash tank. After thoroughly washing it is put through (9) wringer, and dried in (10) Midg-O dryer. On far wall are shelves (11) for chemicals, (12) ventilator, and (13) a dehumidifier.

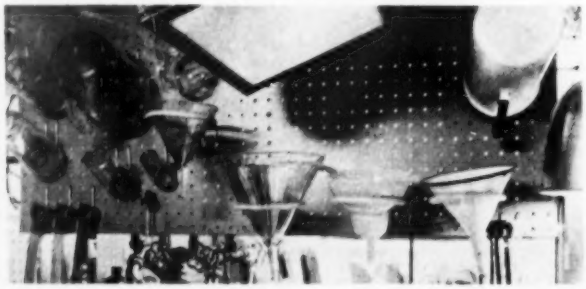
Large shelves hold supplies and mixed darkroom chemicals

Here are 10 useful print-room

Plywood covers keep hypo from evaporating when it is not being used



Hat holders hooked into Pegboard hold funnels in place

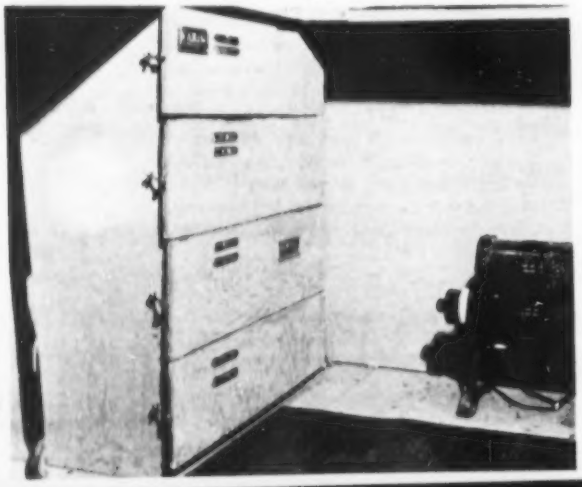


Vacuum cleaner, hung on Pegboard, is used to pick up dust around room

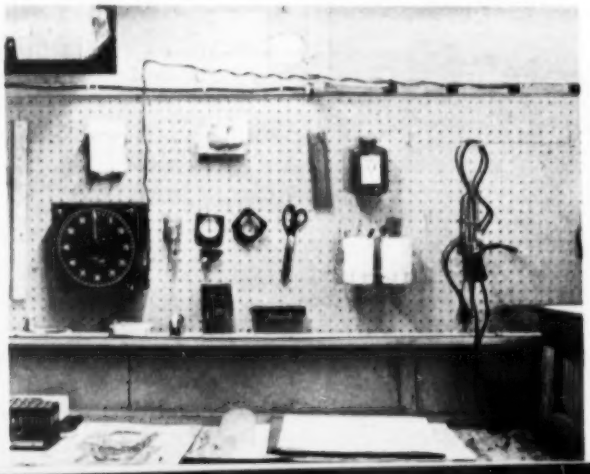
items available in hardware and department stores and then bought the most practical and useful. Doing all the work myself, except for the primary electrical and plumbing work—which must be done by licensed men—I have a fine darkroom that serves me completely.

Before I take you on a verbal trip through the place, let me tell you about some of the most important work that went into it, and some of the problems I faced and conquered. I hope my ex-

Cabinet holds boxes of fresh enlarging paper in various sizes

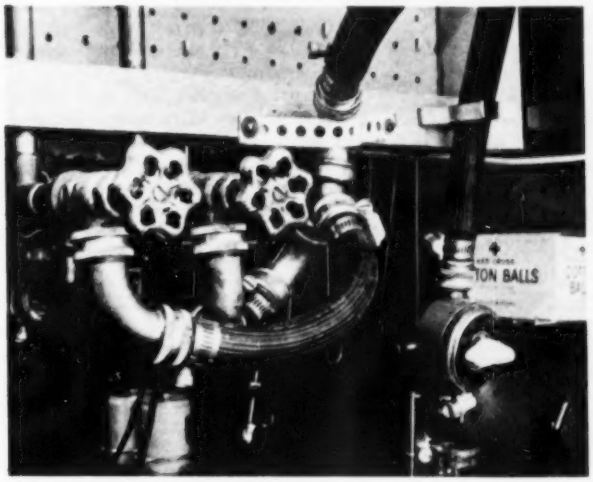


Pegboard holds equipment necessary for specific work done nearby

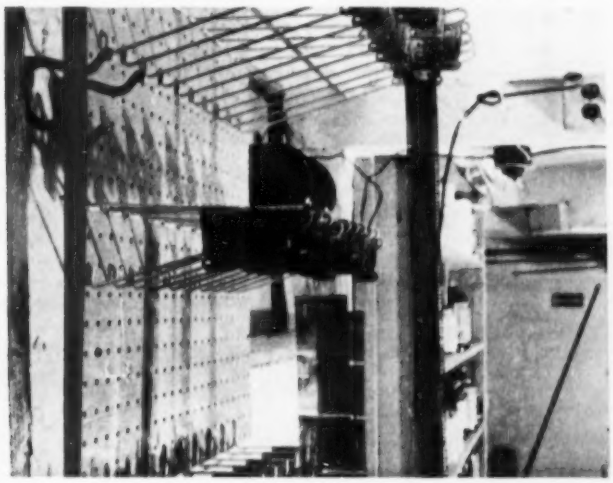


ideas you can adopt for your own darkroom

Garden hose and connections pipe water around room.



Staggered lengths of shelf brackets are used in hanging up wet film



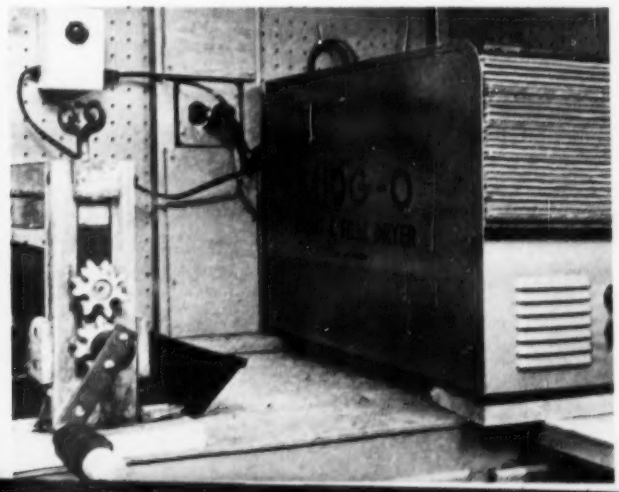
perience will be of help to you.

Once I decided that I could not afford to build an additional room onto my home, and that I had to make my small, dark, and damp basement do, I started listing and solving my major problems.

First, the leaky and cracking basement floor had to be made waterproof. Through trial and error I found that with several layers of cement and paint (both the waterproofing kind) I could make the floor leakproof. Next the walls (which were made of cement block) got the same treatment with waterproof paint and cement. Now, to be perfectly safe, I covered the floor with wooden platforms made from ⅜-inch plywood. They were movable. If a flood should

Stand-up compartments allow trays to be stored quickly and easily

Timer connected between dryer and outlet shuts off dryer automatically



invade my basement, I could cope with it. Also, standing on wooden flooring is much more comfortable, in my opinion, than standing on cement. The wooden platforms were painted with gray rubber-base enamel.

Beforehand, I carefully plotted my layout on paper. I built the partition between my printing room and film room, using 2x3-inch boards for studs and door frame, and hung the door. Now, every crack in both rooms was filled with putty. Once this was done, I made removable plywood covers that went over my basement windows. They could be removed whenever I wanted to let fresh air into the place.

I had not solved the problem of dampness. I furred out the walls with strips of 1x2-inch boards, and placed aluminum-foil insulation between them. Over this went a wall of sheathing which was painted with rubber-base enamel. In some places I used Pegboard instead of sheathing. The last step against dampness was the purchasing of a dehumidifier. With it turned on and the insulation in place, my rooms would be dry, my paper would not get moldy, and my metal parts would not rust.

Films dry near dehumidifier.

When you come right down to it, there are three "D's" that spell disaster for any darkroom—*dampness, darkness,* and *dust.* The first was licked so I started in on *darkness.*

How do you go about making a darkroom that isn't dark? Well, I painted the ceiling white, and the walls and floor gray. Around my film room, I used a pleasing gray on my cabinets, and covered my walls with a gray marbleized vinyl linoleum. Around the print room there would be plenty of safelights. When they were on, the room would have a mellow glow. When they were turned off, and the fluorescent lights were turned on, the room would be bright and cheerful.

The dust problem is a big problem. The dehumidifier didn't help solve it because the drier the air, the more dust we have. The painted surfaces, wall boards, linoleum, and finished ceiling helped. But only constant vacuuming each time I enlarged or developed kept the dust under control. Actually, the only real solution would be an air conditioner, and it may come some day.

As I have said, the basic electric wiring was done by a licensed electrician. However, I was able to continue from this point and put in many plug-in strips which serve the great variety of equipment I use. The plug-in strips make my wiring flexible. I can switch in different plugs quickly and easily.

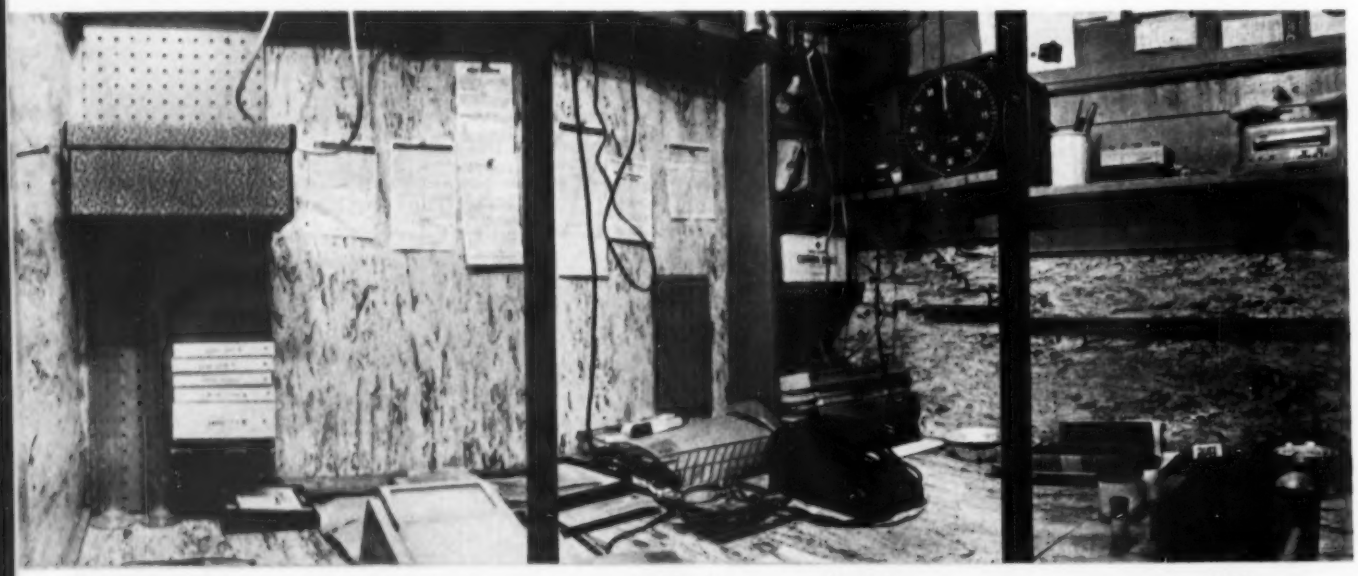
My plumbing, again basically, was done by a licensed plumber. I added my own hose connections because I wanted more outlets than I had, and I wanted to pipe water into my film-room washer.

After all the major building was finished and worked perfectly, I started in on the project that gave me much joy and satisfaction—putting up the Pegboard. Shelves clutter a room and catch dust. This is not so with Pegboard. I place it on walls in strategic spots around both my rooms.

I bought a second-hand sink and a new sink for my darkroom. To give them extra protection, I coated both with a rubber coating that is placed on like paint. It is called Neoprene.

With all this done, there was still another annoying problem. Most of the time, photographic supplies do not smell like a bed of roses. No matter how dry your basement, there are still basic odors to contend with. So, I installed two darkroom venti- (*Continued on page* 120)

Here is a four-wall view of the film room



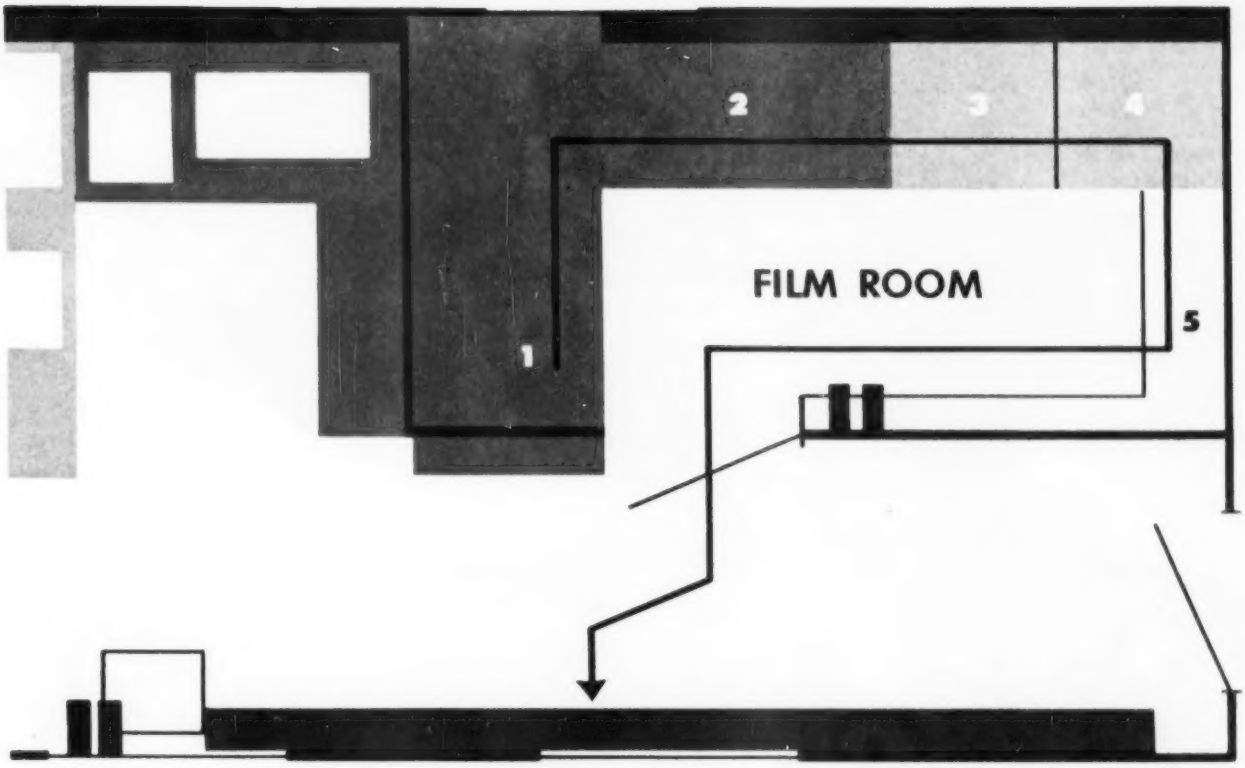
negative file box
fresh film

data sheets on wall
light box

plug-in-strip
Pegboard for notes
catch-all basket

cotton balls

scale
plug-in strip



Film room was planned so processing steps would move quickly. On first bench (1) film is loaded. (This bench can also be used for a desk.) Exposed film is unloaded on (2) another bench. Processing is done on (3) refrigerator shelf that rests over half of sink. After being fixed in two trays of hypo (5), the film is washed in (4) the second half of sink. Outside film room, negatives are hung up to dry on hooks which extend from the Pegboard sheet on wall. (Ventilator is installed in film-room wall.)

can opener
mixing spoons
sink stop
refrigerator-shelf drain
funnel rack
beakers
swabs
developing sink
siphon-type washer unit
2 hypo trays
covers for hypo trays

Motion

By MILDRED STAGG

Walter Strate's experiments with controlled shutter speeds produce photographs that capture the essence of movement by contrasting sharpness and blur

White seamless paper hangs from the ceiling onto floor, is lit top and bottom by rows of reflector lamps.

QUESTION: should an action photograph be sharp all over, or should it be blurred to give the visual effect of the motion?

For years photographers have been answering this problem in various ways. High shutter speeds, oblique camera angles, and high-speed electronic flash have all been used to stop action and thereby produce pictures sharp as a tack. Other photographers have believed in various methods of producing blurred-action photographs which they felt more accurately represented the movements.

Photographer Walter Strate belongs to the latter group. For years he had seen pictures of his ballet-dancer friends either posed or taken with electronic flash. To him the speedlight technique was comparable to ". . . impaling a butterfly on a pin, then expecting the viewer to imagine the insect in flight because the wings are spread." And posed pictures made no real attempt at showing what a dancer looked like *in motion*.

Strate felt these sharp-all-over pictures failed to recreate the mood of the original dance for two reasons. One was that our eyes see less than perfectly—we tend to keep (*Continued on page* 129)

By BOB SCHWALBERG

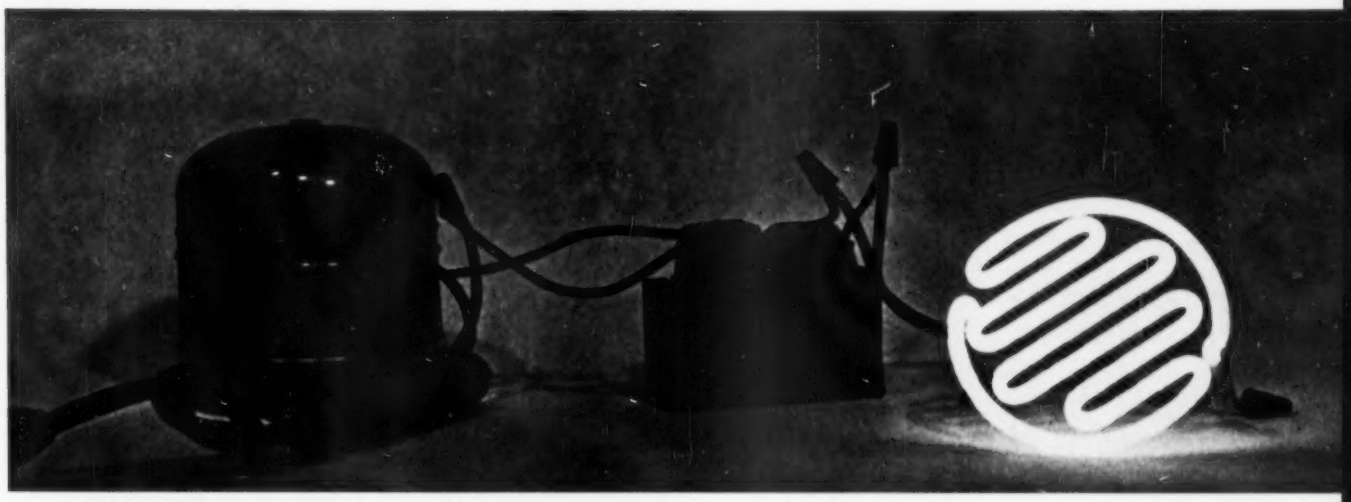
An efficient cold-cathode source for small-camera negatives

The Aristo HI Grid Lamp

Some time ago a friend called late at night to say he was in the midst of printing a set of pictures due on an editor's desk the following morning and his enlarger lamp had burned out. Could he come over and use my enlarger? I said he could and asked that he bring along the prints that he had already made, along with the negatives.

An hour or so later the friend appeared equipped with prints, negatives, and a bottle of an imported liquid refreshment designed, I suppose, to mollify me for having condemned us to a night in the darkroom. Entering the lab he stopped dead in the doorway and asked what in the name of heaven was that peculiar blue-green light emanating from the enlarger?

Contrast range is greater in the upper print, made with straight condensers. However, shadow detail is lost and highlights have blocked up. Lower print, made with the Aristo HI unit, shows the lost detail more clearly and is also less grainy.



High Intensity unit consists of a cover (left), transformer (center) which multiplies incoming 35-watt a-c line voltage before applying it across the terminals of the lamp (right). The spiral-wound tube is filled with a mixture of gases, coloring agents, and some mercury.

"It's a new cold-light unit," I informed him; "you'll like it."

This information was immediately greeted by a stream of blasphemous invectives on the general subject of cold-light units for small-camera negatives. They were, my friend stated between four-letter expletives, flat, soft, unsharp, and slow . . . absolutely no good for 35-mm negatives with important detail in the shadow areas. His negatives could never be printed with this kind of enlarger light source. Would I please switch back to my condensers?

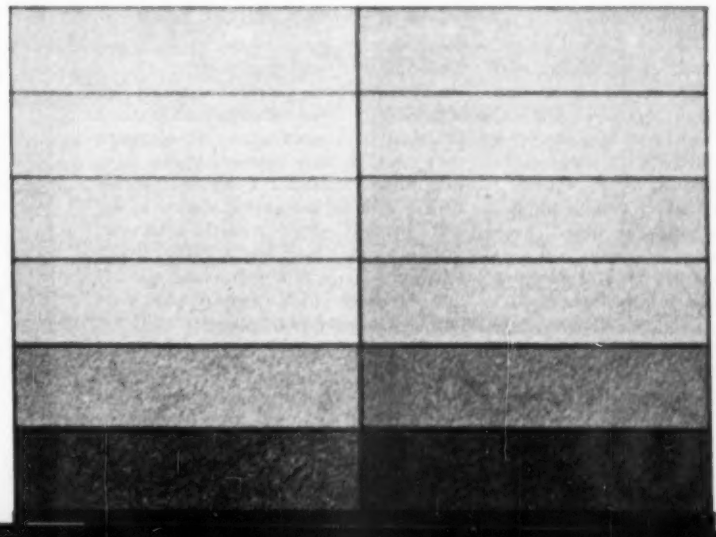
I agreed to switch back to the condensers providing I was first permitted to remake one of the prints he had brought along, using the cold-light unit. Picking a particularly difficult negative which was choked up in the highlights and very thin in the shadows, he dubiously inserted it in the suspect enlarger. The print was made in exactly the same way it had been made originally with an identical enlarger equipped with condensers. Varigam paper was used with the identical filter and exposure time given. While I developed the print my exasperated friend made another cutting remark about cold-light print quality and stepped outside to light a cigarette. Returning, he saw me holding his original condenser print in one hand while I examined the cold-light print which was floating face up in the hypo tank.

As my friend bent over the print in the hypo he was obviously shaken, and in the tone of voice of a man who must admit that his favorite bird dog had killed the chicken he gasped:

"My God, it's better!"

The particular unit which is upsetting so many people's opinion about light sources for enlarging small negatives is the Aristo HI (high-intensity) cold-light head, designed specifically for small negatives from 35-mm through 2¼x3¼. Like other cold-light units, the HI consists simply of a transformer which multiplies the incoming a-c line voltage and applies it across the terminals of a spiral-wound glass tube containing a mixture of gases and coloring agents.

All cold-light units possess two prime advantages (*Continued on page* 135)



Gray scale printed with straight condensers (left) does not have as fine a tonal gradation as the scale printed with the Aristo HI unit (right). Exposures of 90 seconds each at *f*/8 were made on No. 2 Kodabromide paper.

Cover your town

YOU won't get rich selling your home-movie films to television networks and local stations, and you probably won't see your credit line emblazoned across the nation's television screens, either. (TV rarely gives the cameraman a credit.) But with a little thinking, and some photographic know-how, you may find a real source of satisfaction in selling occasional news-film stories to a market that hasn't yet been tapped by amateur movie fans.

It would be fine if we could give you "success stories"—the names of amateurs who started on the road to big-time professional photographic careers by selling their films to television. Unfortunately, we can't tell you such stories, because the nation's millions of amateur movie makers seem not to have discovered TV yet. So let's start here and now by giving you a realistic picture of the possibilities in the TV-news field.

First of all, let's take a look at the potential market for your news films. There are four nationwide television news organizations. These are NBC Television News, CBS Television Newsfilm, United Press-Movietonews, and Telenews. All cover the world with their own staff cameramen, and syndicate their film to television stations throughout the United States (except NBC, which uses its film on network news programs only). And then there are some 380-odd television stations now broadcasting in the United States, which must be considered, too.

These hundreds of local television stations are an important market for your film (although they usually pay only half as much as the national organizations), and all operate differently. Some of them, like WDSU-TV, New Orleans; WCCO-TV, Minneapolis; and WTVJ-TV, Miami; have extensive local news-filming activities, and cover their local areas thoroughly. Others have one- or two-man local news-filming staffs, and cover on a limited scale within their limited budgets, perhaps a total of two or three stories a day. Other stations, particularly those recently on the air, do practically no coverage at all, although they may have a 16-mm camera lying somewhere around the studio together with a man presumably qualified to operate it in the event of earthquake, war, or flying-saucer landings. A study of your own local program schedule will quickly tell you into which category your own local station should be placed.

Both the nationwide organizations and local TV stations in your area are a potential market for your news films. But

Hand-holding is must when shooting quickly on most news assignments. Cameraman should hold camera steady. Racies uses wrist strap, keeps elbows close to sides.

Especially for POPULAR PHOTOGRAPHY, photographer Harvey Shaman followed CBS-TV cameraman Larry Racies (second left) during assignment "Zoo Train." Here, Racies talks with editors before leaving.

After learning what assignment "Zoo Train" would be like, Racies chooses the right equipment and packs it carefully. He used Bell & Howell DL-70 camera and DuPont 930 film.

for TV

By CHESTER BURGER Photographs by Harvey Shaman

Here are four techniques you can use

Questioning authorities, Racies learns of events to come, and decides shooting angles.

Shooting from shadows of inconspicuous spot, Racies gets some candid-style footage.

Racies makes the most of walls and other firm supports to steady his camera.

Turn the page to see how Racies shoots a TV news feature

Turn to page 106 and read how one photographer broke into the TV news market

Cameraman Racies covers a special Connecticut-to-

Signs quickly label locale of shooting . . .

Racies makes

it almost goes without saying, you must give them what they need. What they need are stories which their own cameramen haven't covered.

This immediately rules out the obvious stories, the visits of the President or prominent figures, major parades, conventions, etc. If these events, and any others which can be anticipated, are worth covering, staff cameramen will have been assigned to them in advance. You are wasting your efforts in shooting with hopes of selling your film.

It's the events that can't be anticipated by editors that offer opportunities to shoot some saleable film. Disasters like plane crashes; natural catastrophies like floods, storms, etc., are excellent possibilities. If these happen in your vicinity, you can have your story shot and "in the can" before a news editor can dispatch

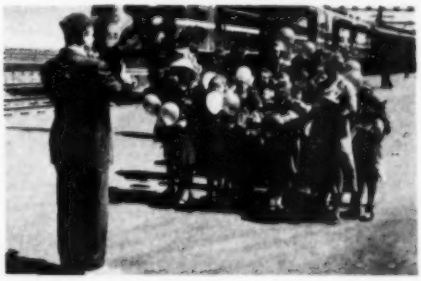
on the train while traveling . . .

Inside the train car, Racies shoots balloons and boy looking out of window, then goes to last car to shoot from rear door. This last shot gets feeling of train motion.

New York 'Zoo Train'

shots in train station . . .

Standard long, medium, and close-up shots are a must in shooting for television. The shots give pacing, and take the place of panning, which is a number one TV "don't."



Racies climbs to top of mail cart. This angle gives him good shots of kids.

While on platform, Racies selects cute girl in cowboy outfit and shoots.

On the alert for candid shots, Racies shoots mother and daughter waiting.

a staff cameraman to the scene.

Usually, natural disasters, like floods, affect a wide area, and in such cases, it is likely that the news editor will be planning coverage at key points where the effects are likely to be most dramatic. Also, since he can hardly keep a cameraman standing by at the scene for a week or two while the story develops, he tries to pick the time and place where the crest will be reached. By that time, of course, the people of the area will already have been evacuated to the local school or church auditorium, and many good action pictures have been lost.

This is where you come in. Your best chance of shooting saleable stories comes when you shoot what you know best—your own community, when things are happening, in the early stages before they reach their (*Continued on page* 106)

. . . and at New York's Bronx Zoo

At the zoo, Racies photographs children near animals, lunch eaters, and one tired boy resting in mother's lap. Such human-interest shots give film editor plenty of good footage.

Color prints from your transparencies

color series part 5

Not all slides make good prints. This article will help you to choose those that will

By NORMAN ROTHSCHILD

FOR FAST and facile viewing of your color efforts, prints are a most convenient form, especially if there's no projector handy. Whether you want to be able to whip a family portrait out of your wallet, embellish some blank walls, or fill an empty picture frame, there's a size for your purpose.

Perhaps you already have a batch of color shots and have been thinking of making some prints. They will need to be screened carefully, because not all transparencies will make good prints. There's a way to look at your slides for this purpose and there are necessary qualities they must have in order to produce a satisfactory print. When you learn how and what to look for, you'll avoid much disappointment when you see the resulting prints.

Viewing and judging

For this judicious viewing, hold the transparency so that only reflected light will shine through it, as illustrated at the right. Direct the lamp light at the wall. The light will reflect back somewhat diffused. This method simulates the average lighting condition under which the prints will be viewed so you will know about what to expect from the opaque version.

Obviously, of utmost importance is knowing what qualities in a transparency will produce a good color print. The shot of the pansies on the opposite page illustrates some of the desirable qualities: it is rich in color and does not contain excessive contrast. While the colors may be of widely different hues, they should be of approximately the same intensity. Generally speaking, a slide that is slightly heavier than usually considered ideal for viewing or projection is best for color printing. The reason is that deeper, more intense transparencies—the result of slight (*Continued on page* 124)

Viewing a transparency to determine whether it possesses good print-making qualities is best done by holding it up to reflected light as shown above. Light from lamp is reflected back from wall through slide. (If you have no white wall, paste up a large sheet of white paper for optimum reflection.) Pansy picture, upper right, is example of a properly exposed color shot with rich colors and adequate, but not excessive, contrast. The fine highlight details insure little danger of this area washing out in the color print counterpart. It was made with a Kine Exakta VX camera on Kodachrome film, exposed for 1/25 second at f/5.6. Other illustrations on page are reproduced from transparencies that would make poor prints, carrying over and even accentuating their various defects. The overexposed shot has flat, washed-out colors. The underexposed transparency is too dense and lacking in important shadow detail. The contrasty shot contains extremes of light and dark which will produce an unpleasantly harsh print. The shot with the bluish cast (which could have been avoided with a Skylight filter) will, of course, produce a print with the same unnatural bluish tint.

Photograph by James Linford

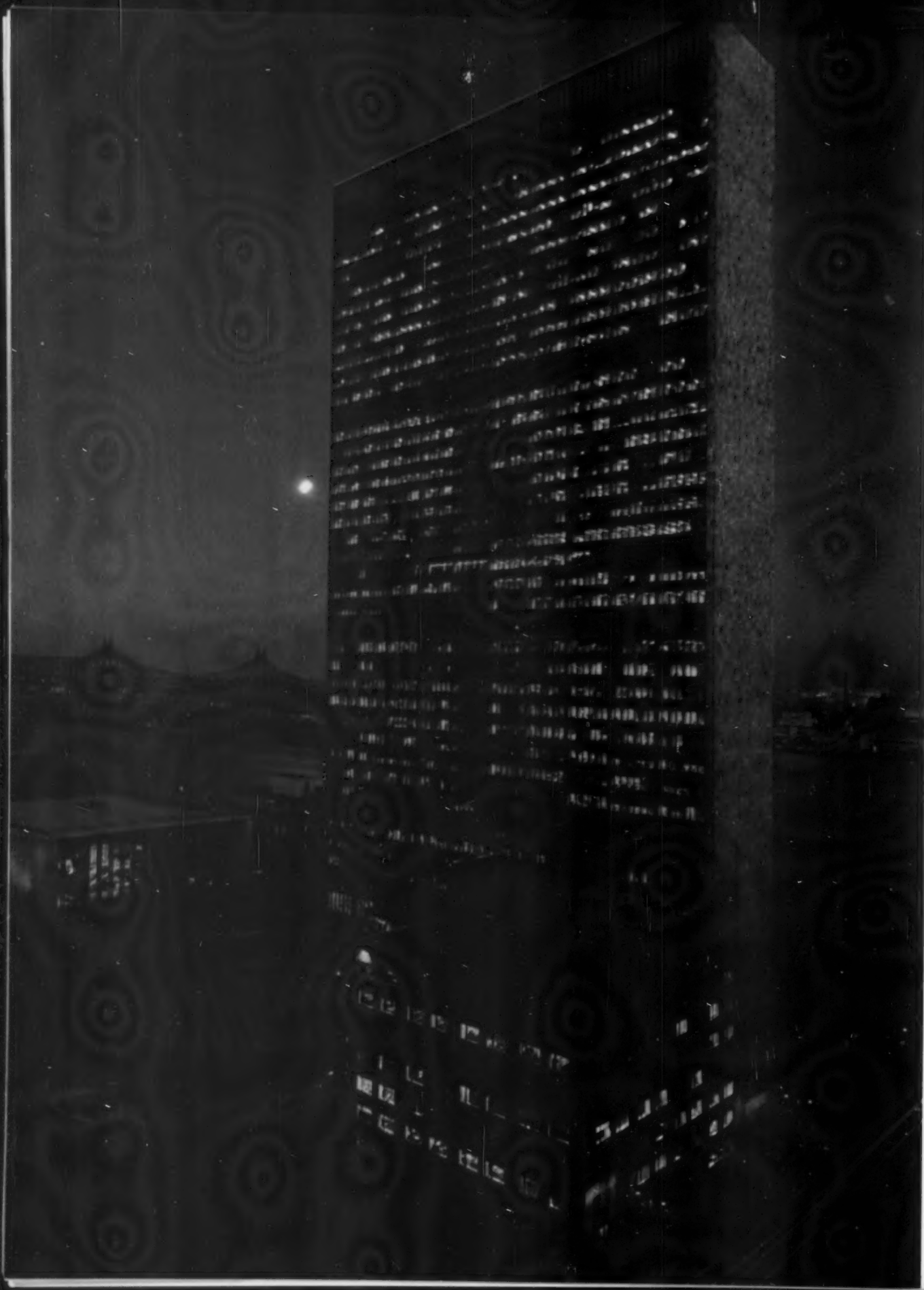
Transparency reproduced at right has qualities which will produce a good color print

Overexposed:

Underexposed:

Too contrasty:

Bluish cast:



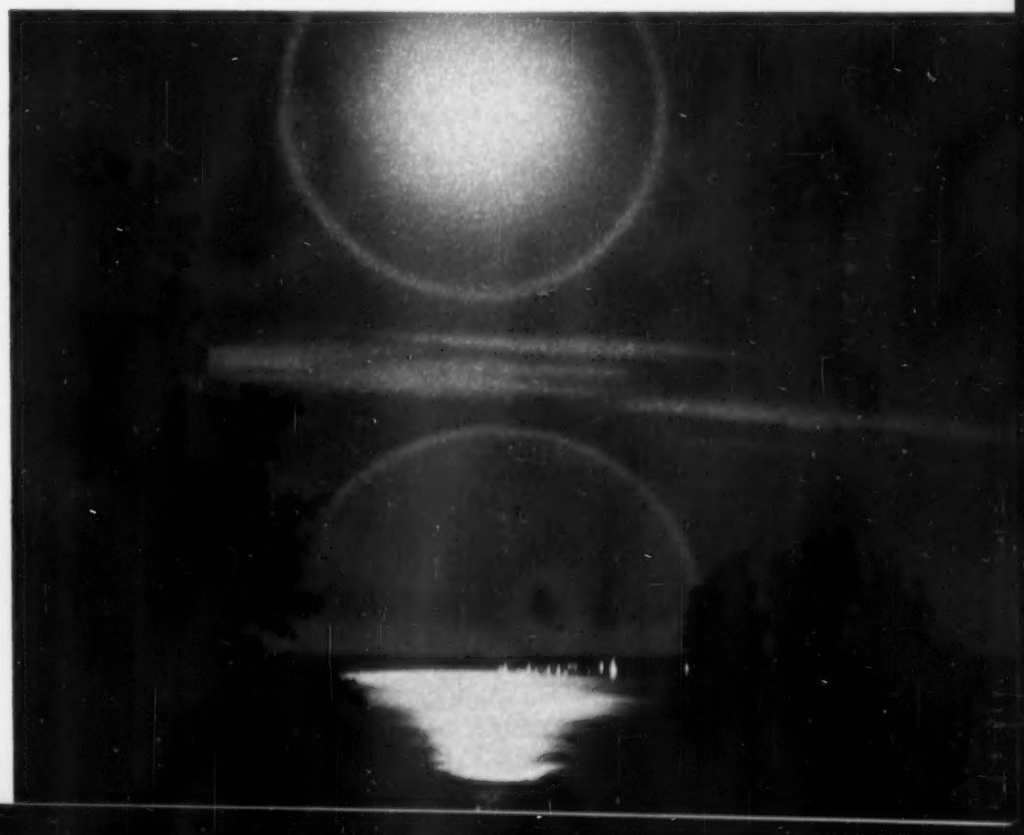
Moon pictures

To prove that picture-taking doesn't have to stop when the sun goes down, we present a group of extraordinary moonlight shots. Some show the moon itself; some make use of the moon as a spotlight; some only look as if they were made by moonlight, but they were really made before the sun faded in the west. Mary Eleanor Browning's view-camera photograph of the UN, for instance, was made after sunset, while the tall building still caught the sun's warm light. The eastern sky was dark enough to set off the radiant moon. Richard S.

Richard Stark (top) made a 4-minute time exposure from his back porch, with an Exakta set at f/2.5, on Kodachrome Daylight film. A small porch lamp added some light.

Mary Eleanor Browning (left) photographed UN buildings with reflections of setting sun in windows, using 8x10 view camera with 7½-in. wide-field lens. Exposure, 90 sec at f/16.

Bryant J. Emmons (right) got strange ghost images in his 2-minute exposure made at Harbor Springs, Mich. He used a Canon and Kodachrome Daylight film, aperture f/1.8.



Nancy L. Gerry braced a Rolleiflex against her knee for this 1½-minute exposure in Miami, on Tri-X film, with *f*/3.5 aperture.

Mario Garettoni of Rome caught night glamour of Venice in 6-second exposure at *f*/3.5, using Leica and Ferrania Color.

Stark, nationally known radio and television announcer, made his moonlight shot at his country home in Sag Harbor, Long Island. He placed his single-lens reflex camera on a fence for the 4-minute exposure. The 60-watt porch light was on, but he did not realize this until after making the picture; it contributed a negligible amount of illumination. Bryant Emmons made his unusual shot at 3 a.m., simply as an experiment. The flare effect around the moon and its reflection is a kind of halation resulting from the long exposure. Mario Garettoni, an Italian manufacturer and camera amateur, made his picture at twilight in Venice. A relatively short exposure was required because of the amount of light in the sky. Nancy Gerry photographed the palm tree by full moonlight. In this picture, too, there is some flare around the moon due to the 90-second exposure.—

Part III

How to make

Here are some key facts about grain and

IN THE first two articles of this series you learned the basic facts about negative density and how to control it (POPULAR PHOTOGRAPHY, June, 1955) and negative contrast (July, 1955). This concluding article covers the problems of grain and sharpness, and graphically demonstrates processing methods which will help you improve the quality of your negatives. If you apply the fundamental principles explained here you should vastly increase your picture-making pleasure, because good prints are easy to make if you begin with a good negative.

how to control grain

As you already know, the density of the negative image results from a deposit of metallic silver. This silver deposit is not homogenous but is composed of tiny particles which tend to clump together during development. If these clumps are visible in the final print, either as an over-all mottled effect or as a distinct granular pattern, then we call the print grainy.

Grain goes hand in hand with film speed: fast films like Kodak Super-XX or Tri-X generally tend to produce

Grain is no problem if you choose the right film and developer, avoid excess density

Grain results from the clumping together of the particles of metallic silver which compose the negative image. At top, left, is reproduced an enlarged section of a print from a grainy negative; bottom, left, is a section printed from a fine-grain negative. Graininess is influenced by the film-developer combination used. For minimum grain use a fine-grain, moderately fast film and develop in an ultra-fine-grain developer. However, regardless of the film and developer used, density also is a most important factor. The thinner the negative, the finer the grain. Therefore, a negative which is slightly on the thin side usually is preferable to a negative which is somewhat too dense.

By JOSEPH FOLDES

perfect negatives

sharpness, developing methods and inspection techniques

grainier results than do medium-speed films like Kodak Plus-X or Ansco Supreme, while the extremely fine-grain films like Adox KB-14 are even slower. Obviously, it is better to choose a slower, finer-grained film unless lighting conditions compel you to use a fast emulsion.

The developer also is important. Many excellent fine-grain and ultra-fine-grain developers are available today. The ultra-fine-grain type produces grain so fine that you can make huge blow-ups without noticing it, but usually require that the film be exposed at its normal speed rating. (Ansco Finex-L, Kodak Microdol, and FR X-33 are popular developers of the ultra-fine-grain type.) More vigorous fine-grain developers like D-23, D-76, Promicrol, and Microphen can be used to increase the effective film speed, but only with an accompanying increase in grain size. Again, unless you need the extra speed, use a developer which produces a minimum grain pattern.

However, regardless of the film-developer combination you choose, density is a key factor in creating grain. The denser the negative the larger the grain tends to be. If the negative is overexposed, the developer is warmer than nor-

Three causes of unsharp negatives

Except for special visual effects, usually we want our negatives to be as sharp as possible. Given a good lens and a good camera, this means careful focusing and the prevention of camera and subject movement. These three pictures illustrate the three basic causes of unsharpness in negatives and, therefore, the resulting prints. Right, when camera is improperly focused the subject will be blurred although other picture areas (the background in this case) will be sharp. Below, camera movement results in the entire picture being unsharp. Below right, subject motion recorded with too slow a shutter gives this effect. See text for details on how to avoid these common causes of unsharpness.

mal, or development is prolonged, then grain size also will increase.

As a basic rule, then, negatives that are *slightly* on the thin side are better than negatives which are somewhat too dense. If you use your exposure meter carefully and develop properly, grain need never be a problem to you.

how to control sharpness

A sharp print can be made only from a sharp negative, of course. Many negatives—and the resulting prints—are not as sharp as they should be. One reason may be that we tend to take too much for granted: because a good camera with a good lens is used we assume that all negatives should automatically be sharp. Granted, lens and camera must be in good working order to make sharp negatives, but the photographer must make a contribution, too—he must prevent camera and subject motion, and focus carefully. What happens when you fail to achieve these goals is demonstrated on the preceding page.

Regardless of the type of focusing mechanism on your camera (groundglass, rangefinder, or distance scale), be sure to focus carefully on the most important part of the subject. If great depth of field with near-to-far sharpness is necessary you may need to refer to the depth-of-field scale engraved on many camera-focusing controls, or check the depth-of-field table included in your camera's instruction booklet. The latter will tell you what distance setting and aperture should be used to achieve any desired depth of field.

Camera motion is another cause of negative unsharpness. When extreme, the results are easily recognizable because the entire picture will be blurred. Usually, however, the blurring is not as extreme as in the example reproduced on the previous page. Slight camera motion may not be immediately recognized for what it is, but nevertheless will degrade image sharpness and the rendition of fine detail. Subject motion causes blur when the shutter is too slow to stop the degree of movement. In this case the moving subject will be blurred although non-moving objects are sharp.

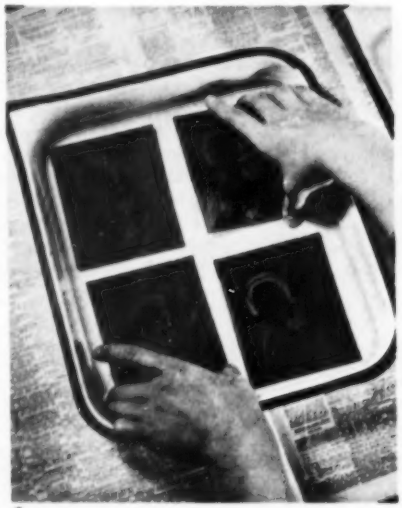
The surest way to overcome camera motion is to use a tripod and a cable release. Of course, for much of your shooting it may be inconvenient or impossible to carry a tripod with you. In that case, try to support the camera so that it won't move at the instant of exposure. Don't push the shutter release with a sudden, jerky motion but use a slow squeeze instead, as if you were firing a rifle. If lighting conditions permit, use a shutter speed of 1/100 second. This is fast enough to absorb normal camera shake and to stop the action encountered in most ordinary shooting.

To stop fast-moving sports and action subjects you may need a high-speed shut-

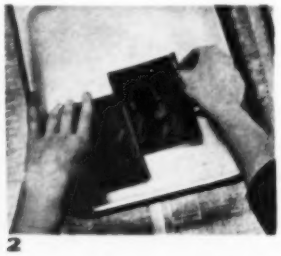
DEVELOPING METHODS

Sheet film in tray

Here are two methods for developing sheet film in trays. Fill tray with developer of proper temperature, turn off light, and remove film from holders. If you have only a few films to develop, spread them out on bottom of tray as shown in Picture No. 1. Keep sheets submerged by pressing down with spread thumb and fingers, being careful to touch film by edges only. If you have many films to develop, a fast method is to shuffle them, as shown below. Submerge films one at a time to form a single pile. Pull out the bottom sheet (Picture No. 2) and place it on top of the pile (Picture No. 3). Keep shuffling from the bottom up until the developing time is complete.



1



2

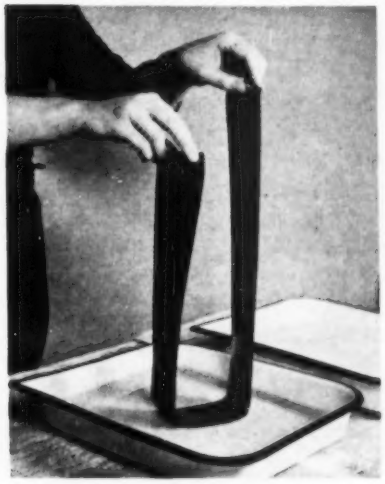
3

Sheet film in tanks

An alternate method is to load sheet film into individual metal hangers and place them in special deep tanks designed for this purpose. The tanks shown below hold ½ gal of developer and accept sheets up to 4x5 in size. Of course, holders must be unloaded and hangers loaded in total darkness, and care must be taken not to touch the emulsion side of the film. Agitate at frequent, regular intervals as recommended by the film manufacturer.

Roll film in tray

Old-fashioned tray method can be helpful in emergencies. Remove paper backing and hold film as shown below, emulsion side down. Now alternately move hands up and down to run entire length of film through developing solution.



Roll film in tank

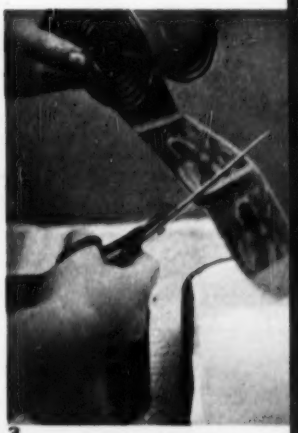
By far the most convenient method for developing roll film is to use a daylight tank. Loading must be done in total darkness, then light-tight lid is placed on tank, and the remaining operations can be carried on in bright light. In setup shown below, tank is placed in bowl of water at 68° F to stabilize temperature. Ice cubes or hot water can be added to control temperature level.

Here's an easy way to learn inspection development

Shoot uniformly exposed roll of one subject, load tank with film, and desensitize, following instructions in text. Add developer and develop for about half the recommended time. Then remove cover, lift out reel, and grasp end of film with fingertips (1). Pull out a few frames and hold no closer than three feet from a Wratten OA safelight (2). Examine the emulsion side of the film (this will be the inside surface as it comes off the reel). Don't try to look *through* the film; look *at* it, just as if you were examining a print in white light. Cut off end frame and drop in waiting tray of quick fixer (3). Arch film with pressure on edges and rewind on reel (4), then drop reel into tank and replace light-tight cover (5). As soon as the detached frame clears in the fixer, turn on white light over tray and examine (6). Try to remember what this negative looked like under the safelight. Repeat with remaining frames. By the time you finish you should have a good idea of the appearance of negatives in safelight illumination during various stages of development, and be able to relate this appearance to contrast and density of the final negative.

1

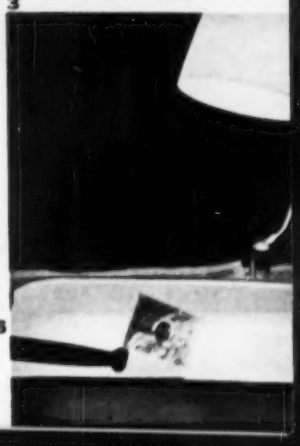
2



3

4

5



6

SAMPLE NEGATIVES

Density comparisons

The ideal of a "perfect" negative is an elusive one. Actually, each negative must be judged as an individual case. Subject matter, photographic technique used, desired visual effect, the type of enlarger you employ, the kind of paper you print on, and the purpose for which you make the print are some of the most important factors. However, the negatives reproduced on this page will provide you with a basis of comparison for your own negatives. The three negatives below all have approximately normal *contrast*, but represent (reading from top to bottom) too little density, normal density, and too much density.

too thin

normal

too dense

Contrast—normal and excessive

Negative below contains normal contrast. Notice that both the highlights and the shadows contain adequate amount of detail.

This negative has too much contrast; highlights (dark areas) are too dense, shadows (light areas) too thin. They both lack detail.

Contrast—normal and too little

Negative below represents a flat (low-contrast) scene recorded with adequate contrast to produce an normal, acceptable-quality print.

This negative of the same scene is too flat to make a good print, has little density difference between highlights and shadows.

Light and dark backgrounds

This negative looks too contrasty, but is exactly the low-key effect wanted. Transparent background will reproduce black on print.

This negative appears dense, but here again creates desired effect. Dense background area will reproduce as pure white on print.

FINAL STEPS

ter. As added sharpness insurance, make the exposure at the peak of the motion (for example, when a jumper hangs poised in mid-air just before he starts to fall) or follow the subject with the camera if motion is continuous. In the case of panning, as this latter technique is called, the subject will be sharp and the background blurred, which often gives an impression of speed. Another way to avoid excessive motion blur is to record the motion coming toward you or going away, rather than moving at right angles to the camera-subject axis. Also, avoid extreme close-ups in action photography because the motion-stopping ability of a shutter increases directly with camera-to-subject distance.

basic developing methods

In practice you'll find there are three basic properties of any developer which need to be considered with great care: the *contrast* and *graininess* it will cause in the negative and the *length of development* required to produce a desired density. Thus there are "soft," "normal," and "contrasty" developers, fine-grain and non-fine-grain developers, and slow and fast ones.

Although these characteristics are built into each developer with the ingredients they contain, the type of film used also influences the final results. No one developer can be universally recommended as the best. The soundest advice that can be given is this: use the developer recommended by the film manufacturer and stick with it until you understand its characteristics thoroughly. Then, if you want to experiment with other developers you have a reliable yardstick for comparison.

Several developing methods are shown in the accompanying illustrations. The tray systems usually are used in rush work or for emergencies. They require less time to complete than do the tank methods, but call for more manual dexterity and also subject the film to greater danger from fingerprints and scratches.

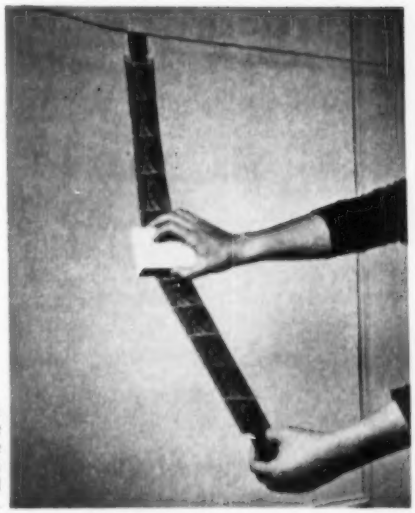
The tank method is much more convenient and foolproof for non-rush development. The most popular type of tank for roll and 35-mm is the daylight type which includes the tank body itself (made from plastic or stainless steel), a removable reel on which the film is wound, and a lightproof cover with baffled openings for pouring solutions in and out. Once the tank is loaded and the lid placed on, the remainder of the developing cycle can take place in normal room light. For sheet-film developing you can buy metal hangers and open tanks of various sizes.

developing by inspection

Most amateurs develop their films by the time-temperature method. This means that the exposed film is placed in the developer (*Continued on page* 142)

Washing

After development and fixing of the negative is completed, be sure to wash it thoroughly in running water at 68° F. A rubber shower hose attachment is shown in use at right; film is left in daylight tank with the lid off.



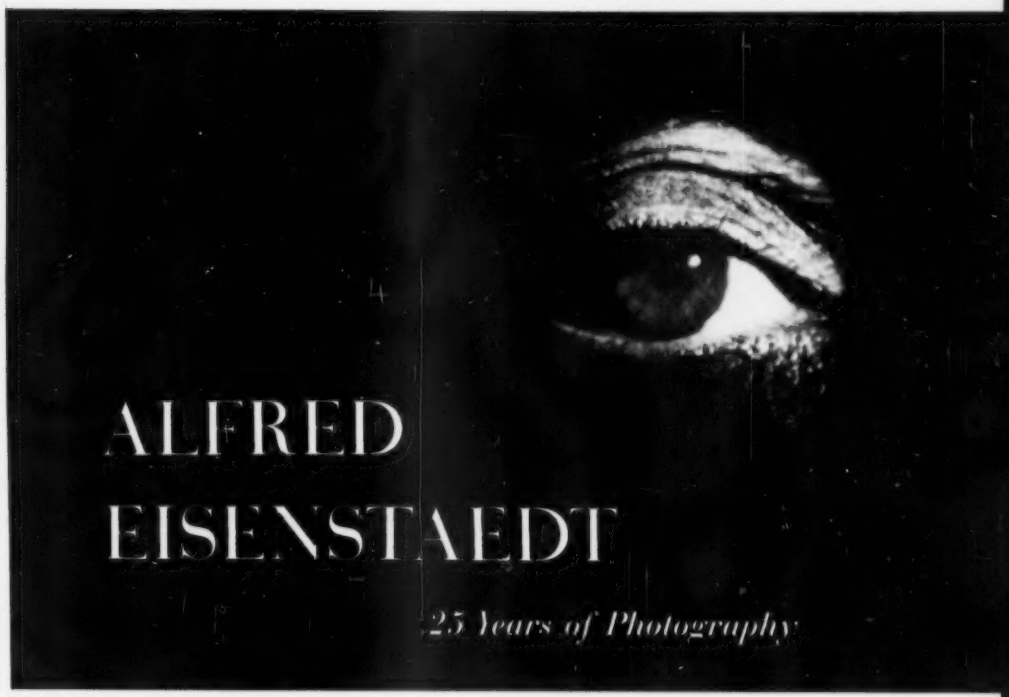
Drying

Hang up thoroughly washed film with a clip and attach a second clip to the bottom so it will dry straight. Remove excess water from *both* sides with a damp viscose sponge or squeegee, and then allow the film to dry undisturbed.

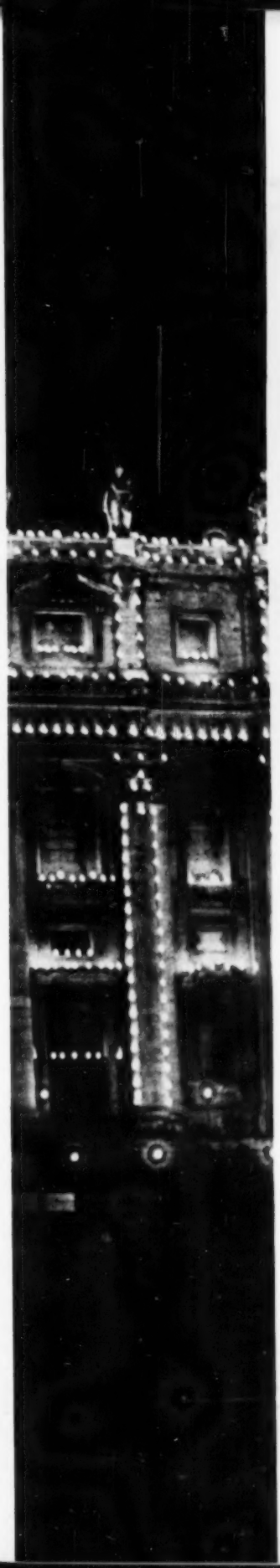
Storing

The precious end product of your efforts deserves careful storage. Cut film into convenient strips and place in glassine envelopes for protection against scratches. Store envelopes in box placed in a cool, dry location.

All photographs courtesy *Life*, © Time, Inc.



Eisenstaedt's eye is displayed on the cover of the catalogue for his retrospective exhibition.



Rome, 1933

St. Peter's at night, blazing with lights, was shot on assignment during Holy Year. Eisenstaedt, who then owned neither exposure meter nor flash equipment, made a time exposure with a 2¼x3¼ Plaubel Makina.

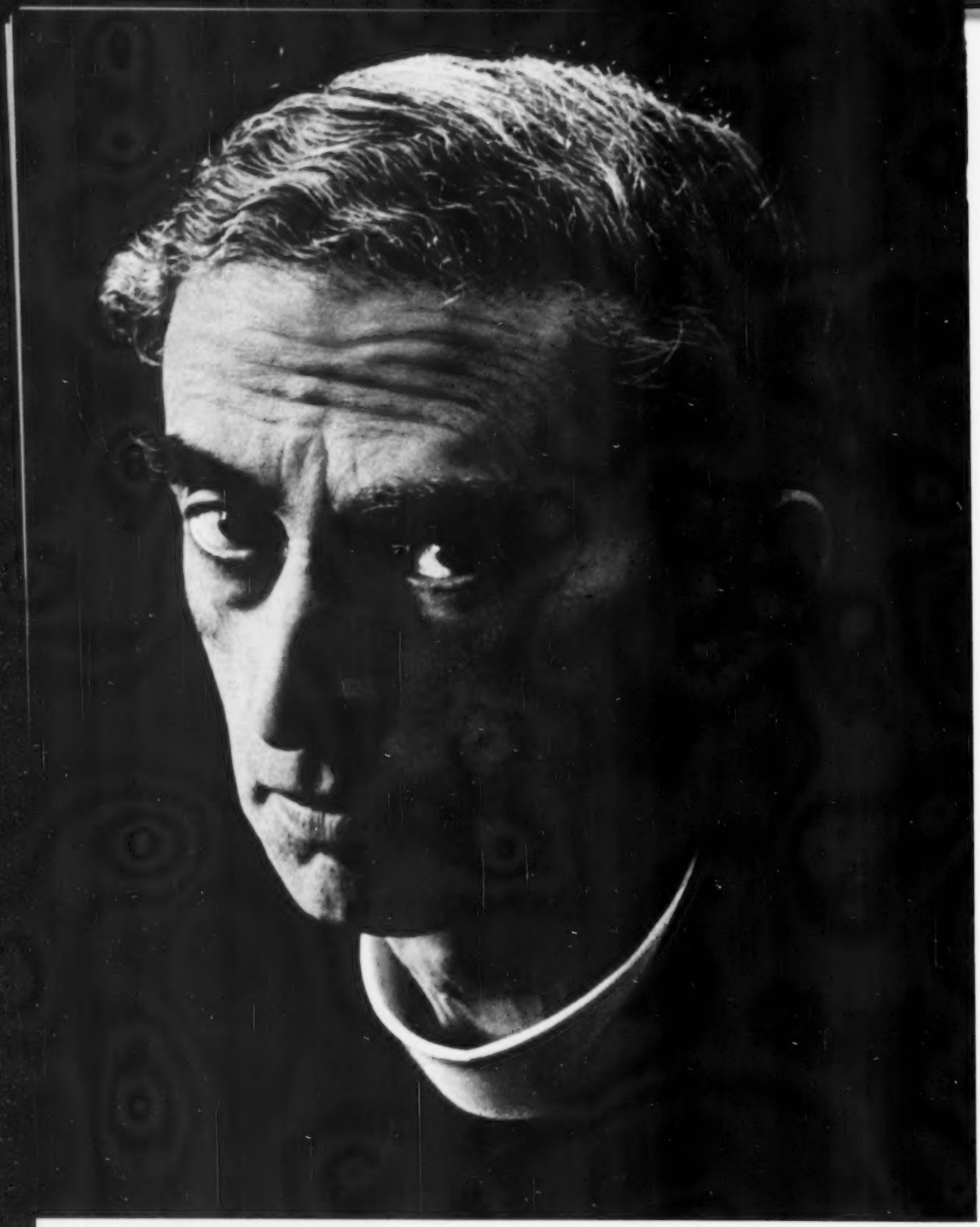
FEW PHOTOGRAPHERS ever achieve the measure of fame meted out to successful authors and painters, but if any photographer's name is a household word it is Alfred Eisenstaedt's—and for good reason. During the past quarter century this friendly, tireless little man—"Eisie" to his legion of friends—has carried his beloved Leicas almost everywhere, witnessing the decisive events of a stormy era, and recording the people, great and small, who participated in them. First in prewar Germany, then later in this country, his name became associated with a fresh, stimulating kind of photoreportage. His pictures combined the best aspects of candid and pictorial photography, and contributed greatly to the growth of photojournalism as we know it today. We are pleased to reproduce this selection from a current exhibition commemorating his silver anniversary as a professional. The exhibit, on display at Eastman House in Rochester earlier this year, is now circulating to museums throughout the United States. It is well worth seeing.

Ballet Rehearsal, Paris, 1931

This is one of Eisenstaedt's favorite photographs. He likes the strength and simplicity of the black-and-white design, and the Rembrandtesque lighting. Camera was a Plaubel Makina.

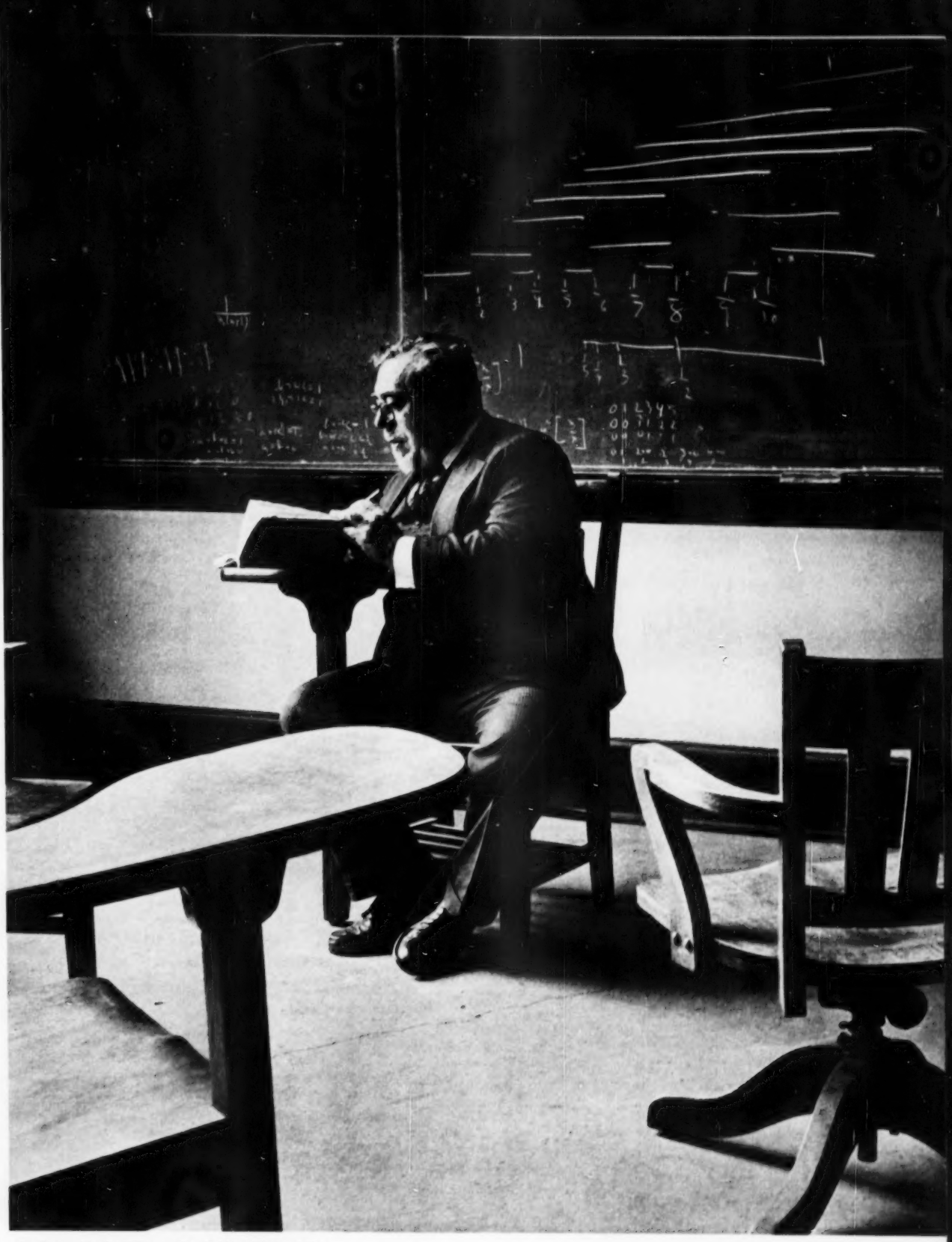
Canal in Venice, 1947

A quick recognition of pictorial design is evident throughout all his work. Here he recorded the rhythmic figure of a gondolier against a backdrop of Venetian buildings with a Leica and wide-angle lens.



Father Martin Cyril d'Arcy, London, 1951

Perhaps Eisenstaedt's greatest asset is his wonderful feeling for people, a sensitivity which finds its fullest expression in his many portraits. Above, window light illuminates the lean, ascetic face of Catholic intellectual d'Arcy, which seems to float disembodied in black space.



Professor Norbert Wiener, Cambridge, Mass., 1950

Cybernetician Wiener is revealed both as a scholar and a human being in this evocative portrait made in his M.I.T. classroom. Note the richness of story-telling details: the student's writing chairs, the chalked symbols on the blackboard. Rolleiflex, natural light.

Ethiopia, 1935

Eisenstaedt's remarkable Ethiopian pictures—like the above photograph of the mayor of Addis Ababa presiding at a trial—added greatly to his growing reputation as a photojournalist. He left Nazi Germany in 1935, later became one of *Life's* first staffers.

Ethiopia, 1935

Mud-caked feet of prone Ethiopian soldier is one of his most famous pictures, and typifies his use of the close-up to dramatize story-telling details. Although he has used many cameras during the past quarter century, his greatest love is the Leica.

Marlene Dietrich, Berlin, 1928

As one of the earliest exponents of candid available-light photography, Eisenstaedt made a great contribution to modern photojournalistic technique. The above picture, taken about the time he gave up button selling and embraced photography as a career, was shot on an Ilford glass plate in a 4x6-cm Ermanox camera. He achieved adequate exposure despite slow films and lenses simply by using extremely slow shutter speeds—employing a tripod when circumstances permitted.

The wonderful eye of Alfred Eisenstaedt

By STANLEY RAYFIELD

THERE is nothing unusual about the eye of Alfred Eisenstaedt. It's a friendly, brown eye that looks at you steadily from an impassive face. You'd never be conscious of any occult power behind it. In fact, you'd regard that eye—if you regarded it at all—as a very normal eye indeed. But with this unremarkable-looking eye Eisenstaedt has witnessed most of the major events and the famous figures of the past fabulous quarter century, seeing them always with a keen professional sense of news values. Then he has made photographic statements about them that are truthful and visually exciting.

This year marks the 25th anniversary of Alfred Eisenstaedt's life as a professional photographer and the event is being celebrated by a retrospective exhibition of his work that right now is traveling around the country. When it comes your way, don't miss it. (See itinerary on page 139.)

Eisenstaedt is perhaps the greatest practitioner of the candid camera art. Turn him loose with a Leica and he will bring back a picture story that reveals not only the facts, but the mood, the drama, the emotions of the people involved so that you, the onlooker, feel you are in the middle of the event and watching it unfold from a privileged vantage point.

Eisenstaedt began like most serious amateur photographers—first as a casual snapshooter, then as a pictorialist. On his 13th birthday, in 1911, an uncle gave him a No. 3 Folding Pocket Kodak which young Alfred used casually in free time between his studies in Berlin's famous Hohenzollern Gymnasium (high school). He did well in history and geography and badly in mathematics. Even today Eisenstaedt is at home with numbers only when he is figuring taxes and the precise calibrations of camera settings.

A comfortable and uneventful boyhood came to an abrupt halt in 1916 when Eisenstaedt was conscripted into the German Army. A year later, badly wounded with shrapnel through both legs during a German offensive in Flanders, he

Paris Slums, 1930

Inhabitants of area near Les Halles, the central market of Paris, were recorded candidly with a Leica. Woman, top, called two men, who chased Eisenstaedt with drawn knives.

Frank Costello, 1952
Eisenstaedt's quick, sure, journalistic eye is shown in these three photos. Above, an angry Costello leaps to his feet before walking out of Kefauver hearings.

was invalided out of the army. It was another year before he walked again. The post-war inflation ruined the well-to-do Eisenstaedt family and Alfred got a job selling buttons and belts, wholesale to the trade. He was now 28 and photography was the last thing he had on his mind. He had somehow to make a living.

One day a friend showed him how to attach a light box to his Zeiss Ideal-B and make enlargements of his negatives. When Eisenstaedt saw how he could enlarge the features of a girl he had photographed at the belts-and-buttons plant, he experienced, as it were, a revelation from on high. From that moment on, he lived, ate, and dreamed photography. His friends began to regard him as a curious fellow. He gave up going to the Berlin cafes with them to drink coffee and listen to music, which he loves passionately. Actually he was saving every hard-earned Reichsmark to buy photographic equipment. He sold buttons to earn a living, he says, but he took pictures to keep on living. (*Continued on page* 138)

Arturo Toscanini, 1930
This animated candid shot of the great conductor was made in Bayreuth, Germany. Eisenstaedt collects autographs of the notables he meets in his work.

Dr. Joseph Goebbels, 1934
Nazi Propaganda minister glares malevolently at camera. Eisenstaedt was covering the 14th League of Nations meeting in Geneva when he made this shot.

Student Nurses, 1937

One of his favorite techniques is to use the inherently great depth of field of a wide-angle lens to provide dramatic, near-to-far sharpness of detail.

The Kodak BULLETIN

Quick Color in a

—and how to take the insides out of a slide projector without burning your fingers or losing your temper . . . how to make a super-shutter . . . the inside facts on the most popular yellow in the world . . . a new sport-shooting eye for your Kodak Chevron Camera . . . and the new movie projectors that put 40% more light on the big new schoolhouse screens.

Showed 'em, in color

We ought to tell you about Rex Hendren. Rex is a member of the Spencerport, N. Y., Camera Club, and a 35mm man. As soon as the new high-speed Kodak Ektachrome Film came out, he tried some. Processed it himself. Turned into an enthusiast. Tried to promote it to all his friends. "Easy," he said; "no trouble at all." "Don't give us that stuff," they said; "you've got to have a lab, it takes all night, you need air con-

ditioning and temperature controls and such." "You're crazy," Rex said; "I process it in the kitchen; all I use is a dishpan of 75-degree water to stand the solution jars and tank in; it's a cinch!"

Nobody would believe him. Finally he got mad. His club meets in the basement of a Spencerport church. When members walked in for the next meeting, here was a camera, photofloods, and Hendren. He snapped a roll of pictures . . . put on a processing demonstration in the church kitchen . . . force-dried the films . . . *had full-color transparencies on the screen before the meeting was over* . . . and four new members signed up for the color section of the club that same evening.

The moral is that you can process Ektachrome film, and get full-color transparencies, with no more time and steps than it normally takes to process black-and-white films and make prints. Try a couple of rolls of E135 or E828,* with a Process Kit E-2, and see for yourself. You'll feel wonderful.

**Also now in E620 and E120.*

Popular yellow

Since we make Kodachrome, Kodacolor, and Kodak Ektachrome full-color films, we're naturally fond of all colors. One, however, is our favorite. It's the most famous yellow in the world. It's the favorite yellow of a great many other people, too—whether on a box of 620 Verichrome Film, a package of 16 x 20 Kodak Medalist Paper, a Brownie Camera carton, or any of a thousand other dependable photographic products. We admit this popularity without blushing; in fact, we rather like it.

Maybe you'd like to know a little more about our world-famous yellow. The ICI polar ordinate values for its dominant wavelength are: standard, 581.0 mu; dark limit, 581.0; light unit, 581.0; low purity limit, 581.0; high purity limit, 581.0. (If there seems to be a bit of sameness here, that's exactly the

idea; we want you to recognize Kodak yellow without fail wherever you see it.) However, we allow a little latitude from the green limit, 580.2, to the red limit, 581.8. We also allow the excitation purity to vary from the standard, 0.80, to a low limit of 0.77 and a high of 0.83. Daylight reflectance mustn't sag below a dark limit of 0.52 or rise above a light limit of 0.56, and we much prefer our exact standard of 0.55.

The Munsell renotation for standard Kodak yellow is 0.6Y 7.75/12.1, and most Kodak products are packed in boxes or envelopes of this color. To guide printers and suppliers, the requirements are set out in a detailed color specification, which covers colorimetric standards, tolerance limits, sampling and inspection procedures, and test methods using a spectrophotometer, photoelectric tristimulus colorimeter, or visual check against a set of standard and tolerance color cards. The spec says ominously: "*Failure of material to comply with this specification . . . shall be reason for rejection.*" We mean it, too; for millions of people depend on this standard Kodak yellow to identify the photo products they want. You can spot the familiar yellow boxes all the way across the store.

Color tank

• We remind you again—for processing 35mm Kodak Ektachrome Film, there's no sweeter unit than a Kodak Day-Load Tank. At your Kodak dealer's, $9.95. If he's temporarily out of them, have him place an order for you.

Painless extraction

In some slide projectors, changing lamps or taking the condensers out for cleaning is like pulling teeth. But not in our Kodaslide Signet 300 and 500 Projectors. Lift out the top grill, and you can change lamps in a few seconds. Twirl a coin-slotted screw at the rear (see cut) and you lift out the whole internal assembly

—for easy cleaning of reflector, condensers, heat-absorbing glass. This is just one more detail that helps make the $72.50 and $79.50 Signet 500 and $59.50 Signet 300 stand out head and shoulders above most 2 x 2 projectors. (They also stand out for coolness, safety, choice of single or automatic slide changing, high screen brilliance, crisp image detail, and superb color quality. Visit your Kodak dealer and see for yourself.)

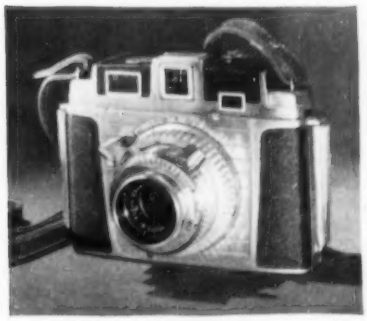
Church Cellar

Sporty camera

One of the big advantages of the Kodak Chevron Camera is that it is an *eye-level* roll-film camera. Wherever there is fast action, or you want to take a quick shot, you'll find it as handy and convenient as a 35mm miniature camera.

To make it even handier, we've recently come out with a sports finder kit for the Chevron. It comes complete with a clip which is attached to the top of the camera, has slip-over acetate masks for both front and rear frames to be used when the camera is equipped with the Kodak 828 Adapter.

The Kodak Chevron Sports Finder Kit is $12. The Kodak Chevron Camera



with a Kodak Ektar Lens *f*/3.5, *Lumenized*, 1/800 shutter,* ball-bearing lens mount, highly accurate coupled rangefinder, is $198.50 at your Kodak dealer's.

*How to make a super-shutter

First make a mechanism plate and silver-solder a hub to it. That's your base. Then carefully solder on nine studs to hold the mechanism. Next make eight highly accurate gears for timing and six parts for the blade controller. You'll need five screws to put the retainer plate on with. This holds on the five shutter blades. Then make the five diaphragm wings and a plate to cover them and . . . oh, shucks, it would take all day to tell. What we're talking about is a Kodak Synchro Rapid 800 Shutter. This rotating-blade shutter is the finest, fastest between-the-lens shutter made. If you could try one out, you'd know what real accuracy in a shutter means.

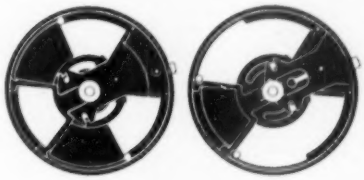
You can buy a Kodak Synchro Rapid 800 Shutter fitted to a 101mm *f*/4.5 Kodak Ektar Lens for $98.50. Perfect for a 2¼ x 3¼ press-type camera. Or, you can buy one fitted to a 78mm *f*/3.5 Kodak Ektar Lens for $198.50, including a Kodak Chevron Camera. Your Kodak dealer can tell you more.

40% more light, no extra cost

Darnedest thing you ever saw. We mean the new "Super-40" Shutter on our new Kodascope Pageant Sound Projectors AV-073, AV-153, and AV-153-S. At silent speed, 16 frames per second, it's a 3-blade shutter providing 48 light interruptions per second. Switch to sound speed, 24 frames a second, and it *automatically* becomes a 2-blade shutter, still provides 48 interruptions, *and passes more than 40 percent more light to the screen!*

(Nowadays, when the trend is to bigger screens in schools, club auditoriums, and most other places, this extra 40 percent is big stuff. And the Super-40 Shutter achieves it with no increase in lamp wattage and without demanding a faster, more expensive projection lens.)

Why 48 light interruptions per frame? Because the "flicker threshold" of the



average eye is about 48. Below that frequency, the pictures seem to wobble from lighter to darker on the screen. A 3-blade shutter at 16 fps, or a 2-blade at 24 fps, provides the number of interruptions your eyes require for an impression of smooth, continuous illumination. It's something like reducing the hum level in a hi-fi music system. If you're a hi-fi enthusiast (as so many serious skilled photographers are) you know exactly what we mean.

Nice thing about this new Super-40 Shutter is that it's not a tricky, complex mechanism. It uses a simple, direct application of centrifugal force—the same thing that makes a dancer's coattails whirl out during a fast waltz. When you shift the Super-40 from 16-speed to 24-speed, the faster rotation actuates a sliding element, and the three apertures become two (see cut).

Any time you don't need the 40 percent extra light (and you probably won't when you're using a Pageant with a small- or medium-sized screen) you simply move a latch and the shutter remains in 3-blade position. When you're projecting to an auditorium-sized screen, or operating in an incompletely darkened room, you merely unlatch and the Super-40 puts the lumens into high gear.

We're supplying this new super-shutter on the new "3" series of Kodascope Pageants at no increase in price. The 7-watt AV-073, single case, is $425; the 15-watt AV-153-S, single case, $455; and the de luxe 15-watt AV-153, dual case, $530. Your Kodak Audio-Visual dealer has all the details, or our Department 8-V can provide them for you.

(Incidentally, we're continuing the popular Pageant 7K2. See back cover, this magazine.)

Cake to eat and have

We don't pretend that $75 is pocket change you can slap down on impulse for a Kodak Signet 35 Camera. It's a bit of money. It's a lot of camera, too.

Most photographers who want to start using a Signet 35 in their work as soon as possible buy the camera on time. Some of them find it practical to get the filters, flash equipment, carrying case, and other photo aids they have their heart set on at the same time they get the camera. Talk to your Kodak dealer about the small down payment and easy terms he can offer you. Most likely he has a plan to fit your budget. It's the way to eat your cake and have it too.

Prices include Federal Tax where applicable and are subject to change without notice.

Kodak
TRADE MARK

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

Anti-Newton-ring rubber bumper, second condenser are in upper part of negative carrier. Rotating single-frame mask is in place.

To operate elevating mechanism insert thumb in cavity, grasp large knob with fingers and squeeze it to left—then raise or lower lamphouse.

Small dimly lighted window to right of circular screen is visible in dark, shows automatically number of diameters negative is enlarged.

Filter compartment for variable contrast or color filters is vertical to reduce dust; out of optical path to prevent focusing scratches.

Lamphouse opens quickly by pressing button, revealing socket for any lamp-base type, heat-absorbing glass, adjustable reflector.

To insure perfect automatic focusing, height of easel from baseboard must be measured in millimeters, adjusted on control scale.

Close-up of negative carrier in open position shows how a single exposure is held in place by clipping edge with a small spring.

Diaphragm setting ring is large, knurled for rapid operation; *f*-markings (above setting ring) are illuminated, visible in darkroom.

new:

Micromat-

35-mm enlarger

By DAN BECKER

WARNING! All old established names in enlarger manufacture who feel they have a 35-mm design that needs no improvement: Take heed! The new enlarger import hot off the Italian design-boards, the Durst Micromat-Color, introduces a unique combination of many desirable features. Designed with color printers in mind, it is also a fine tool for black-and-white work.

This danger sign could well be posted in the design rooms of enlarger manufacturers, for out of Bolzano, Italy, has come a brand-new name in precision machines, the Micromat-Color, which bids well to do for the Durst name in enlargers what precision-built sport cars did for the names Bugatti and Ferrari.

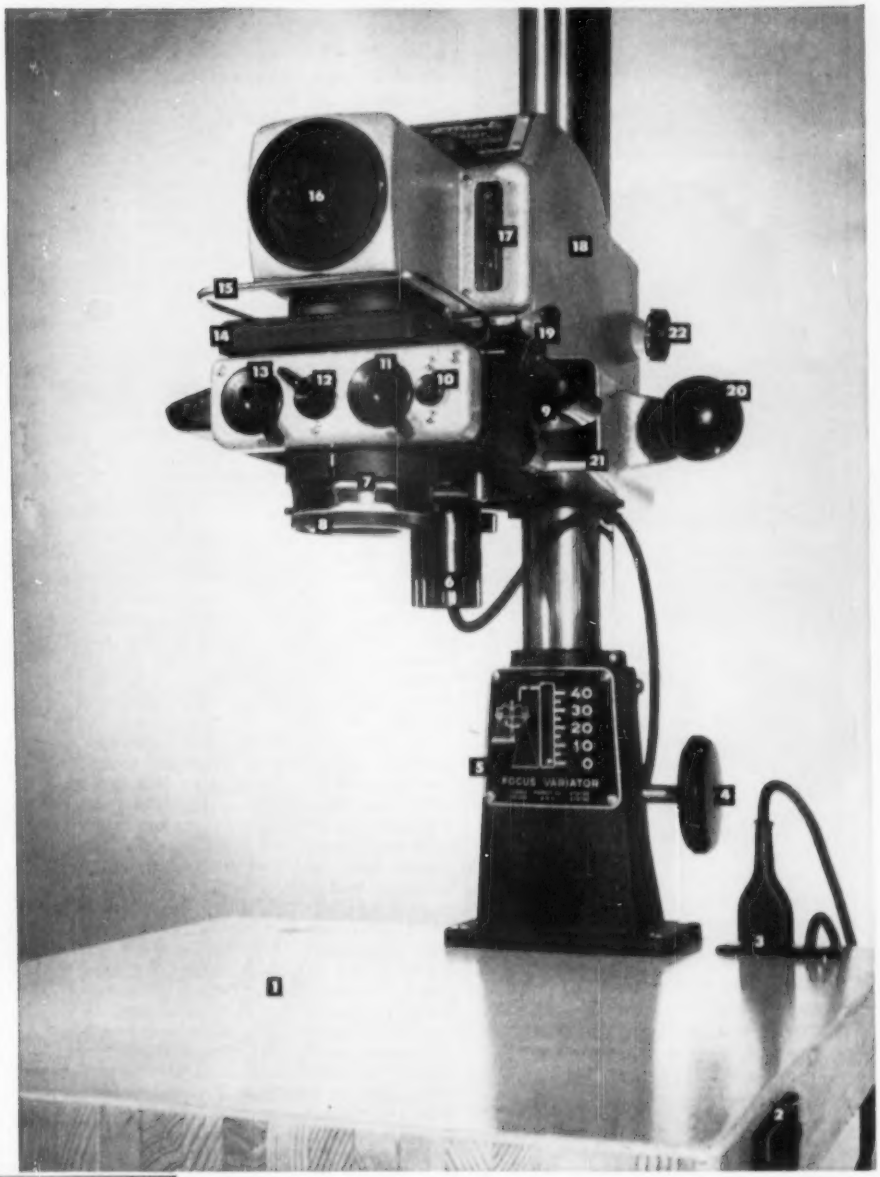
The Micromat-Color is a completely new, functionally designed and sturdily built 35-mm enlarger (one of a complete line). It bears little resemblance to any machine made heretofore. One look tells the observer that the designers threw away the popular attitudes about enlarger form and made their new machine an instrument hamstrung by no conventions, one that had only a single criterion: to take its shape and design from the present-day requirements of 35-mm enlarging.

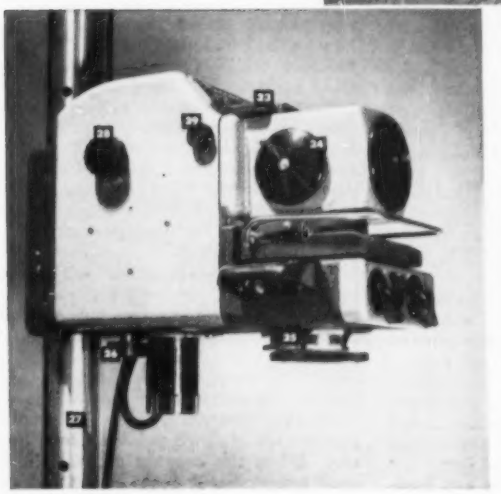
There are so many entirely new features built into the Micromat that any account demands a sequential description, listing each innovation in the order of its importance to the user.

The Micromat is rigidly constructed, mostly of lightweight aluminum supported by steel, so that it will make perfectly sharp prints from full-frame 35-mm negatives (the most popular, 24x36 mm in size) and also from the square negatives produced by such cameras as the Robot and other rapid-sequence designs. It does this by a truly balanced automatic focus system that will yield enlargements from wallet size to 17 diameters (roughly 16x24 inches)—and larger if desired, by turning the lamp housing (no. 18 on (*Continued on page* 98)

Color

A report on an all-new, functionally designed Italian import—intended to match the precision of modern miniature cameras



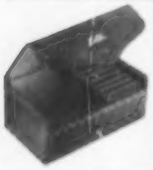


↑ **An unusual sight** at first glance, the Durst Micromat is nonetheless precisely organized, extremely simple to operate. **1** Laminated baseboard. **2** On-off switch. **3** Power-cord connection. **4** Focus-variator knob. **5** Focus-variator scale for adjusting automatic focus to height of individual easel. **6** Adjustable lamp socket. **7** Illuminated aperture markings. **8** Aperture-setting ring. **9** Two-way film cups. **10** Shutter release. **11** Shutter-cocking lever. **12** Front-to-back distortion-control lever. **13** Red filter lever. **14** Negative carrier. **15** Pressure-release lever. **16** Viewing screen for copying cassette. **17** Magnification-factor scale. **18** Lamphouse. **19** Side-to-side distortion control. **20** Knob to release enlarging head for up-and-down movement. **21** Thumb position for using knob. **22** Locking screw.

← **23** Vertical compartment for variable-contrast or color-printing filters. **24** "Ripro" dial for viewing groundglass of copying cassette. **25** Override wheel for manual focusing. **26** Locking knob for lamp socket. **27** Enlarger post. **28** Reflecting-mirror adjust knob. **29** Lamphouse door knob.

Can *you* name this famous photographer?

CLUES: Represented U.S. on State Dept. good will tour of South America a few years ago. Does color portraits for Chicago Tribune, N. Y. News. Authored book just published by Rand McNally & Co. About to appear in her own TV show.



WIN AN ENTECO COMBINATION CASE!

Compact carrier case of top-grain cowhide is compartmented to hold your Lens Hood, Adaptor Ring and up to eight filters.

Ten Enteco Combination Cases will be awarded as prizes to the FIRST TEN readers who write in correctly identifying this profile. Name the photographer—also specify what size Combination Case you require—Series V, VI or VII.

CLOSE-UPS are yours with ANY camera when you use an **Enteco Proxar Lens!** Take portraits, still-lifes, flowers, small animals. Get sharp, detail-revealing shots of anything from a cam to a cat's eye. Enteco's Proxar fits like a filter with no change in exposure. Take color or black-and-white, shoot indoors or out. Available in +1, +2, +3 diopters, all sizes except Series VIII and IX. Price range, $2.50 to $4.00.

DISTANCE SHOTS—telephotography for sports events, seascapes, wildlife, etc.—are yours at low cost with an **Enteco Distar Supplementary Lens!** Available in −1, −2, −3, −4 diopters, all sizes except Series VIII and IX. Price range, $2.50 to $4.00.

Insist on ENTECO for America's finest Filters, Polarizers, Adaptor Rings and Lens Hoods. Better pictures are yours—with ENTECO!

For complete data on filters and lens attachments, send for Enteco's FREE bulletins.

Enteco

ENTECO INDUSTRIES, INC.
610 Kosciusko St., Brooklyn 21, N. Y.

Micromat-Color 35-mm Enlarger

(*Continued from page 96*)

the illustration on page 97) around on its baseboard (1) through 180 degrees of swing, for floor projection.

The lamphouse was so designed that almost any lamp type made can be used to supply illumination, from the standard American opal types, through mercury-vapor discharge tubes and the rarely used clear lamp and projector "T" lamp types. By resetting the height of the lamp socket (6) with the locking nut (26) provided, adjusting the reflecting mirror (28) to optimum position, and either installing or removing the diffusing glass filter as the case may indicate, the Micromat can be made to perform well with low-powered or very high-output lamps of clear or frosted glass.

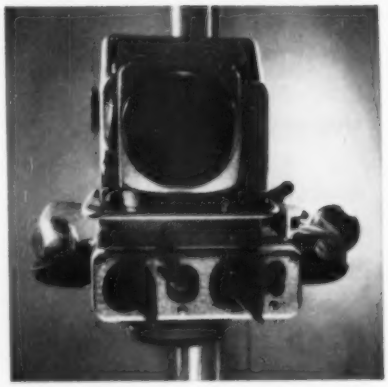
Since it has been designed for color printing as well as black-and-white enlarging, this feature is advantageous to the worker who wishes to install a lamp of special color temperature or of high light output. A newly designed socket allows installation of screw-thread or bayonet-type lamp bases in a push-in-to-fit arrangement. For ordinary printing this "interchangeable" light system permits a matching of light contrast and intensity to negative quality that will make many printing problems easier than ever before.

The lamp is installed in a base-down position (a must with projector lamps) and supplies projection light through a split, twin-condenser arrangement. An integral part of the optical system is the heat-absorbing glass filter, so that no matter how long the printing time the negative will remain cool. One quick push of a button (29) opens the precision-fitted lamphouse for fast lamp change or easy cleaning.

One of the available lenses for projection is the high-quality Schneider-Kreusnach "Componon," of German design. It is carefully and exactly fitted to the optical system of the enlarger at the Durst factory for best possible auto-focus operation. For the first time in the history of enlarger manufacture, the lens is so integral a part of the automatic operation that the manufacturer cautions the buyer to check the serial number of the lens to make sure it coincides with the one stamped on the nameplate of the enlarger body. So precisely engineered is the automatic focusing mechanism, that the final computations are adjusted by hand to match one lens with one enlarger; other lenses, even though perfectly good and of the same make, just won't give completely accurate automatic focusing. Two other lenses are available: the new Durst Galileo Ingra and a Zeiss Tessar. Both are 50-mm in focal length, *f*/3.5 maximum aperture.

A luminous diaphragm-setting ring (8) is provided with the lens installation that is ingeniously new in at least two aspects. For one, it has a reflecting surface, lighted by a clever spill from the red filter, which enables the worker to see his *f*-stops at all times without endangering his printing paper or interfering with his sensitive darkroom vision.

Again, this setting ring juts out horizontally from the lens barrel flange (7), somewhat like a lens mounted in the center of a miniature automobile tire, so that setting the diaphragm opening is easier than on any enlarger ever made. It can be adjusted with one finger, either hand, or the back of a hand with equal



Reversible film cups keep the protruding ends of a negative strip (top) or roll (bottom) out of the light path; they fit into the enlarger body with a simple plug arrangement.

ease; and the diaphragm markings always face front, easy to read. For automatic focus operation the lens locks into a click-stop position by rotation of the complete lens-mount assembly. However, a manual override (25)—a plastic semi-circular disk—is installed above the diaphragm setting ring for focusing when very large prints are being projected onto the floor. It does not interfere with normal operation. The complete lens-mount assembly can be removed from the enlarger for cleaning by screwing the lens out of its mounting ring, without disturbing the precision alignment.

The reader may have realized that the lenses supplied (or available) with this enlarger are of camera quality; they are better than really needed for the simple job of projecting a two-dimensional image onto a flat surface without normally observable distortion. But this is true because the Micromat is more than just an enlarger. It is also a precision copy camera. When the copying cassette (extra cost) is installed in place of the negative

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Leica IIIC, f3.5 Elmar		86.50
Leica IIIC f2 Summitar		114.95
Leica IIIF f3.5 Elmar	237.00	127.75
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Leica IIIF f1.5 Summarit	357.00	181.50
Nikon f2 Nikkor	269.00	109.50
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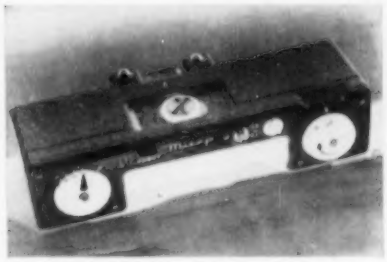
carrier (14), copy pictures can be shot on 35-mm films in commercially packed cartridges or on bulk-film lengths up to 30 feet. The cassette is supplied with an automatic frame counter, a magnifying groundglass screen, and an automatic film protector slide that opens when inserted in the enlarger and closes upon removal. The latest model copying attachment is electrically driven, including an electric shutter with speeds from 1 to 1/10 sec, and bulb. In order to see the copy material on the illuminated baseboard exactly as it will be framed by the 35-mm format, the cassette is pulled half way out, and the large dial (24) turned from "N" (the



Copying cassette fits into negative stage, has electrically driven shutter, film advance.

position for enlarging) to "RIPRO." The image then appears on the viewing screen (16) as it will be on the film.

Several other noteworthy and important features in enlarger design make the Durst Micromat-Color one of the most exciting products ever introduced for 35-mm photography.

The negative carrier is a heavy piece, rigidly made, with features built in that should prove a boon to the harried 35-mm worker. For such disturbing items as Newton rings, uneven pressure causing the negative to buckle slightly out of the plane of focus, wandering single-frameitis, and scratching when a strip is pulled hastily through the carrier are eliminated as causes of annoyance.

Newton rings, those frustrating circular patterns caused by the pressure of glass on the film in the negative holder of an enlarger when moisture or high humidity is present, are prevented in the Micromat by keeping the film free of contact with any glass surface. The second half of the machine's twin-condenser system is mounted in the negative carrier, just over the negative track, but a rubber bumper (which looks something like a fresnel lens) has been inserted to prevent the film from actually making contact with the flat underside of the condenser surface. This bumper, which compresses when the negative holder is inserted in the machine, also presses the particular negative being worked on flat against a solid base plate to eliminate the slight curling of the emulsion which can mean a loss of critical focus over the whole print on other enlargers. The grain pattern of the negative still falls out of focus around the edges when the lens is wide open—but this is characteristic of all lenses and is eliminated by "stopping down" slightly.

Another thoughtful addition to the negative carrier is the single-frame pressure

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clip, which keeps a solitary 35-mm negative from wandering around in the carrier, by gripping it on the edge of the film's margin. For square format 35-mm negatives a built-in rotating filter allows masking the opening in the carrier to eliminate light spill through the waste space between frames. Though one of the condensers is mounted in the carrier assembly it is prevented from coming in contact with the negative, the beforementioned rubber bumper thereby reducing the hazard of having every slightest speck of dust projected sharply (but it must still be kept clean!). A large lever (15) mounted on the carrier allows negative strips or rolls to be inserted from the front, with the carrier remaining in its working position. This lever is depressed or lifted to advance the negative strip to the next frame without risk of scratching the emulsion.

When the worker looks at the front of the machine he is confronted with three black levers and a button which make the Micromat look more like the control panel of an electronic instrument than an enlarger. If he manipulates the large left-hand lever (13) he finds that it brings the red safelight filter out from a hidden, dust-free position, to its place *over* the lens. It is so gentle a maneuver that the manufacturer says the user can "dodge" his exposure while making a print that needs "holding back" in the foreground by moving the filter control gently back and forth. However, since any risk of shaking the lamphouse would also risk blurring the exposure, this suggestion is of doubtful value, unless the individual worker does some testing first.

The large right-hand lever (11) is a shutter control. When it is twisted to the right the shutter covers the lens. To the left, the shutter moves back out of the way for the unhampered passage of light to the baseboard. This control is meant specifically for enlarger use with mercury-vapor tubes, or any other light source that must burn constantly for proper operation. However, the button (10) to the right of this control also controls the shutter, but in the manner of the "bulb" setting on a camera shutter. With the shutter closed, pressure on the button opens it and keeps it open only as long as the pressure is maintained. Releasing the button causes the shutter to close again. This could be an excellent device for dodging a multiple-exposure print, when the basic exposure must be done in more than one step, or when the worker wants to interrupt an exposure in the middle for any reason. Care must be taken not to shake the enlarger if this is done. At extra cost the manufacturer will install an electric shutter control for use with a constant-burning light source.

The small central lever (12) on the control panel is one of the two distortion controls with which the machine is equipped. This one corrects the typical foreground distortion found in horizontally taken pictures, by raising the negative carrier from the front edge. The other distortion control (19) is located on the right side of the machine, just behind the carrier position. This one corrects vertical distortion through a considerable arc when the carrier is tilted by it to the left or the right. A positive locking device guarantees returning the carrier to its normal position when wanted. In keeping with the best practice the lens remains in its perfectly horizontal setting at all times; only the negative carrier tilts.

Another beautifully designed feature of the Micromat is its elevating mechanism for controlling the size of the pro-

Lever tilts negative carrier to control side-to-side distortion; lens stays horizontal.

jected image. It is composed of a large knob (20) jutting out from the lamphouse on the right side plus a large slot (21) adjacent to it. When the fingers of the right hand are placed over the knob and the thumb is inserted in the slot, a firm squeezing action frees the housing for simple and very rapid movement up and down the post. Releasing the knob relocks the lamphouse by spring action. Twisting the knob allows additional, minor variations in size.

Working in conjunction with the elevating mechanism is an illuminated magnification factor window (17). It faces the worker when he is in position before the machine. This window, which is lighted just enough to be visible in the darkroom, reveals a scale which changes as the lamphouse is raised or lowered, to show exactly how many times the diameter of the negative has been enlarged; the scale reads from 2 through 17. It should prove valuable to amateur and professional alike; working with it the printer can match any given size in one quick motion, by simply adjusting the degree of enlargement to a given factor number. Practical uses that suggest themselves are: duplicating at any future date the exact size of prints already made; enlarging to a specific dimension for magazine or book reproduction; in color work, matching the size of enlargements from different negatives at different times; or the computation of changes in exposure that occur when the same negative is made in a smaller or larger size, by noting the change in linear magnification and calculating the difference in illumination on the easel.

The Micromat-Color is so sensitively adjusted that, when using an easel, the worker can bring the auto-focus mechanism into line with the particular height of any easel, by measuring the height of its work surface in millimeters and set-

(*Continued on page* 150)

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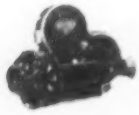

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Bolex H-16 Supreme w/Switar coated f/1.4 lens **$510.00**

Bolex H-16 Supreme with Switar coated 3-1.4 lens, Switar 16mm coated f/1.8 lens, Switar 50mm coated f/1.4 lens and deluxe H-1 case complete **$779.00**

Bolex C-8 w/Lytar ctd. f/2.5 lens **$ 89.95**

Bolex C-8 w/Lytar ctd. f/1.9 lens **129.95**

Bolex B-8 w/Yvar ctd. f/2.8 lens **119.50**

Bolex B-8 w/Lytar ctd. f/1.9 lens **149.50**

Bolex B-8 w/Switar ctd. f/1.5 lens and Yvar 1½" (telephoto ctd. f/2.8 lens) **$274.50**

Pan Cinor Zoom coated f/2.8 lens (for 8mm) **$219.50**

Pan Cinor Zoom coated f/2.8 lens (for 16mm) **$349.50**

Bolex Electric Camera Drive **89.50**

Bolex Tripod **69.50**

Bolex Titler and Special Effects Kit **299.50**

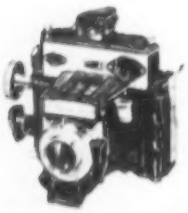
Bolex M-8 Projector with case **169.50**

Bolex G-8mm-16mm Projector **339.50**

Pan Cinor w/case 17½ to 70mm thru lens view **$449.50**

ASTRO LENSES	Cine Cameras (Standard)	Exakta* Pentacon*	Still Cameras (Standard)	Hasselblad	Leica Price incl. Identoscope
125mm (5") f/2.3 Pantachar	$ 195	$ 220	$ 195	$ 220	
150mm (6") f/2.3 Pantachar	275	300	275	300	$ 425
150mm (6") f/1.8 Pantachar	345	370	345	370	495
300mm (12") f/5 Fernbild	195		195	220	345
300mm (12") f/3.5 Telastan	385	420	395	420	545
400mm (16") f/5 Fernbild	245	270	245	270	395
500mm (20") f/5 Fernbild	395	420	395	420	545
640mm (25") f/5 Fernbild	725	750	725	750	875
800mm (32") f/5 Fernbild	895	920	895	920	1,050
1000mm (40") f/6.3 Fernbild	1,100	1,125	1,100	1,125	1,250

*Specify which mount required.



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All New Omega 120

Human engineered 2¼ x 2¾ press-type camera, gives 4 x 5 picture quality on inexpensive 120 roll film! Coated 90mm Omicron anastigmat f/3.5 lens. Oversize focusing mechanism, super-sensitive oversize magnifying range finder, auto-parallax correction. Rapax X sync **$239.50.** Rapax full sync **$258.50.**

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OMEGA is the last word in enlarging equipment. Brooks has the largest slection in the West.

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35mm

A-2 Amateur w/o lens **$ 89.00**

35mm to 2¼ x 3¼

Omega B-8 ..... **109.50**

Automega B-7 ..... **134.50**

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Omega D-2 w/Omegalite **$164.40**

Omega D-2 w/Condensers — without Colorhead **$173.50**

Omega D-2 w/Colorhead and Condensers **$183.50**

Automega D-3 w/Omegalite **$197.50**

Automega D-3 w/Condensers — without Colorhead **$207.50**

Automega D-3 w/Colorhead and Condensers **$217.50**

2¼ x 2¼ to 5 x 7

Automega E-5 w/Condensers **$286.55**

Automega E-5 w/Colorhead and Condensers **$301.55**

Automega E-5 w/Omegalite **$304.75**

BROOKS 1st for Exakta

New 1955 EXAKTA VX

One of the world's greatest 35mm single-lens reflex cameras. With waist level finder.

Exakta VX w/f/1.9 Schneider Xenon fully auto lens **$351.70**

Exakta VX w/f/2 Westagon, fully auto **$289.50**

Exakta VX w/f/2.8 Westanar fully auto lens **$239.50**

Exakta VX w/auto Biotar f/2 ..... **$357.00**

Exakta VX w/auto f/2.8 Tessar **$279.50**

AUTOMATIC LENSES

50mm f/2.8 Auto. Tessar **$100.00**

50mm f/2.8 Automatic Westanar ..... **$ 69.50**

50mm f/2 Automatic Westagon **$110.00**

50mm f/1.9 Automatic Xenon **169.50**

58mm f/2 Automatic Biotar **$164.50**

WIDE ANGLE

28mm f/3.5 Angenieux **$120.00**

35mm f/2.5 Angenieux **99.50**

TELEPHOTO

75mm f/1.5 Pre-set Zeiss Biotar **$216.50**

90mm f/1.9 Angenieux **$149.50**

90mm f/2.5 Angenieux **94.50**

135mm f/2.5 Angenieux **179.50**

135mm f/2.8 Pre-set Steinheil Quinar **$149.50**

135mm f/3.5 Angenieux **89.50**

135mm f/4 Pre-set Zeiss Triotar ..... **$ 85.00**

150mm f/5.5 Meyer Tele-Megor **$ 55.95**

180mm f/5.5 Meyer Tele-Megor **$ 82.95**

180mm f/4.5 Angenieux **96.00**

250mm f/5.5 Meyer Tele-Megor **$132.15**

400mm f/5.5 Meyer Tele-Megor **$199.50**

BROOKS Cameras

45 KEARNY at MAIDEN LANE
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BROOKS

West's Largest Selection — Budget Terms Available

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Leica M3 with Summicron f/2 lens	447.00
Leica M3 with f/3.5 Elmar lens	348.00
Leica M3 Body	288.00
Leica IF body, built-in flash	64.80
Leica IIF body, built-in flash	120.00
Leica IIIF body, built-in flash	180.00
Leica IIIF with f/3.5 Elmar	177.00
Leica IIIF with f/2 Summicron	336.00

	M3	Standard
35mm Summaron f/3.5	$ 99.00	$ 96.00
50mm Elmar, ctd. f/3.5	60.00	57.00
50mm Summarit, f/1.5	180.00	177.00
50mm Summicron f/2	159.00	156.00
85mm Summarex, f/1.5, Chrome		360.00
90mm Elmar f/4, Chrome	93.00	90.00
90mm Elmar f/4, Chrome, Collaps. mt.	150.00	
125mm Hektor, f/2.5		147.00
135mm Hektor, Chrm., f/4.5	141.00	135.00
135mm Hektor sht. mtd.	121.50	120.00
Leica Meter	30.00	17.50
Omnica case		60.00
200mm Telyt f/4.5		156.00
400mm Telyt, f/5		450.00
Leica reflex housing		102.00
300mm Kilar, f/5.6		149.95
400mm Kilar, f/5.6		239.95
Leica Flash Gun	19.50	24.00
Leica Chico flashgun	297.00	18.00
Stereo Outfit for Leica	60.00	294.00
Omnica case for		60.00
Focomat IC Enlarger w/o lens		$147.00
Valoy II Enlarger w/o lens		96.00

BROOKS 1st for Press

1955 SPEED GRAPHIC

Brand new features of the 1955 Speed Graphic include Graphic coupled rangefinder with built-in Rangelite and automatic parallax-correcting optical viewfinder.

4 x 5	Crown Graphic	Speed Graphic
w/135mm Optar f/4.7 MX 1/400	287.65	331.49
w/135mm Tessar f/4.5, MX	245.00	289.00
w/127mm Ektar f/4.7 MX	268.45	313.49
w/150mm Tessar, f/3.5, Sync	295.00	339.00
w/150mm Xenar f/4.5 MX 1/400	249.50	294.50
w/152mm Ektar f/4.5 X sync 1/200	293.45	347.45

4 x 5 w/135mm Xenar f/4.7 MX 1/400 Range Finder	$209.95	$249.50
2¼ x 3¼ w/105mm Color Scopar f/3.5 Kalart R.F. w/1/400 of sec. MX sync	$199.50	$229.50

w/101mm Ektar f/4.5 MX 1/800	297.95	336.05
w/105mm Tessar, f/3.5, MX	245.00	289.00
w/101 Optar f/4.5 MX 1/400	278.85	318.39

BRAND NEW PRESS CAMERA ACCESSORIES

	Regular	Special
4 x 5 Lisco Holders	6.25	2.99
23 Roll Film Holder for 2¼ x 3¼	21.75	17.20
23 Graflmatic Film Holder for 2¼ x 3¼	17.95	14.40
23 or 22 Roll Holder for 4 x 5	23.95	19.20
45 Graflmatic Film Holder for 4 x 5	24.95	19.95
Graflarger Stand	19.95	16.95

NEW 1955 TRADE-UPS

LEICA IIIF — $49.95 plus your old LEICA IIIF (red dial)
ROLLEIFLEX 1955 — $77.50 plus your old Rolleiflex MX.
ROLLEICORD V, $49.25 plus your old Rolleicord IV
MINOX III S — $48.50 plus your old Minox III
Fully Synchronized CONTAX IIA & IIIA — $69.00
IIA for IIA or IIIA for IIIA
EXAKTA VX — $43.50 plus your old EXTKTA VX
RETINA IIIC — $80.50 plus your old RETINA IIA
NIKON S-2 — $97.50 plus your old NIKON S

NEW—DISCONTINUED 1954 MODELS

	Reg.	NOW
New VX Exakta w/f/2.8 Preset Tessar		$169.00
New VX Exakta with f/3.5 Tessar lens		149.00
Praktica FX f/1.9 preset Primoplan	$159.50	$ 79.95
Flexaret Synch. f/3.5	98.50	48.95
Ditto Camera f/3.5	99.50	48.00
Ditto Case	8.95	5.95
105mm Ditto Telephoto	39.50	29.95
Bolsey B2 f/3.2 lens	56.50	39.95
Bolsey B22 Setomatic f/3.2 lens	69.50	44.95
Bolsey C reflex f/3.2 lens	89.50	48.50
Contax IIA f/2 X synch	336.00	228.00
Contax IIIA f/1.5 X synch	412.00	298.00
Super Ikonta A f/3.5 Tessar X synch	99.00	69.00
Super Ikonta B f/2.8 Tessar X synch	139.00	99.00
Nikon 1954 model, w/f/1.4 Nikkor	299.50	189.00
Exakta penta prism w/rf	85.00	38.95
Robot Star f/1.9 lens	249.00	99.00

Many others—write for complete list.

CONTAX D

Contax D w/f/2.8 preset Tessar	$94.95
Contax D w/f/2 preset Zeiss	$124.95
Eveready Case	$ 12.00

PRAKTICA

Praktica FX f/1.9 preset Meyer	$78.95
Praktica FX f/2.8 preset Tessar	$78.95
Case	8.95

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Now Cinemascope wide screen 8mm and 16mm movies in your own home. Same lens goes on camera and projector. Takes and projects 50% wider pictures, saves 50% on film costs. Uses standard screen, film, exposure processing methods. Superb definition, clarity. No close-up distortion.

8mm	$ 75.00
16-35mm	125.00

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Fully auto 500-watt slide projector with more wanted features than any other on the market. Changes slides automatically, fast, medium or slow speeds, built-in pointer, one hole lever, fast f/3.5 lens. Many other features.

REVERE 555—Auto mix 2 x 2 500-w	$119.50
REVERE 553—Same features, 300-w	$79.50
	$69.50

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Combined rf and vf metal focal plane shutter 1 to 1/1250 sec. plus flash sync, delayed action self-timer.

w/f/2 Sonnar	$345.00
w/f/1.5 Sonnar	374.00
w/f/3.5 Tessar	261.00
CONTAFLEX II—same features plus built-in ASA expos. meter	$189.00

1955 ROLLEIFLEX AND ROLLEICORD

With new coupled shutter diaphragm

w/Tessar f/3.5 lens	$232.50
w/Xenar f/3.5 lens	217.50
Rolleiflex w/Schneider Kreuznach f/2.8 lens or w/Zeiss Planar lens f/2.8	$281.50
Rolleicord V w/Xenar f/3.5 lens, full synch, light value	$134.55
Case for 2 RC	16.00
Case for 3.5	17.00
Rollei Flash Gun	29.95
Rollei Exchange New Camera with light values for your camera MX	$77.50

BROOKS 1st for Linhof

LINHOF 2¼ x 3¼ CAMERA —Complete 3 Lens Outfit

Super Technika 2¼ x 3¼ Camera, 65 f/6.8 W.A. Angulon Lens, 105mm f/3.5 Schneider Xenar Normal Lens, 180mm f/5.5 Tele Xenar Telephoto Lens. All in full synch. Compur Rapid Shutter to 1/500 sec. All lenses coupled to rangefinder. $569.90

Same as above, with 105mm f/2.8 Xenotar, W.A. and Tele-photo. $663.70

LINHOF 4 x 5 SUPER TECHNIKA

Multifocus Rangefinder — Tilting and Swinging Back — Revolving Back — Triple Extension Bed — Drop Bed — All Lenses Coupled to Rangefinder — And **NOW NEW UNIVERSAL BACK** and Extalite Screen. (Accepts Polaroid, Gratmatic, and Roll Film Holders.)

4 x 5 LINHOF OUTFITS — Price below, includes camera with lenses (✔). With full synch. **MX Shutters up to 1/500 sec. Coated** — Other combinations on request.

4 x 5	135mm f/3.8 Press Xenar	150mm f/4.5 Xenar	150mm f/2.8 Xenotar	90mm f/6.8 Angulon	240mm f/5.5 Tele Xenar	Price
One lens Outfits	✔	✔	✔			$429.70
						$419.70
				✔		$629.25
						$515.15
				✔		$505.15
Two lens Outfits	✔			✔		$714.70
		✔	✔	✔		$635.60
				✔	✔	$635.60
Three lens Outfits	✔			✔	✔	$845.15
		✔		✔	✔	
			✔	✔	✔	

CARL ZEISS TESSAR LENSES

105mm f/4.5 MX	$ 66.00
105mm f/3.5 MX	85.00
135mm f/4.5 MX	90.00
150mm f/3.5 X-sync	150.00
150mm f/4.5 MX	99.00

APO LANTHAR LENSES

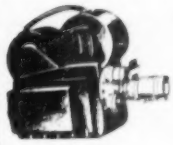
105mm Lanthar MX f/4.5	$ 90.00
150mm Lanthar MX f/4.5	120.00
210mm Lanthar X shutter	175.00

Schneider Lenses:

65mm W.A. for 2¼ x 3¼ MX f/6.8	$ 64.95
90mm W.A. for 4 x 5 MX f/6.8	74.95
120mm for 5 x 7 MX f/8	99.95
105mm Xenotar f/2.8	169.50
127mm f/4.7 Xenar MX sync	64.95
135mm f/3.8 Xenar MX sync	99.95
150mm f/4.5 Xenar MX sync	89.95
150mm f/2.8 Xenotar	299.50

Prices subject to change without notice.

BROOKS 1st for AURICON



16mm CINE-VOICE

AURICON PRO-600

16mm optical-sound on film, self-blimped, sync motor drive for single or double system recording. Electromatic take-up, film flow without friction clutches or belts. Various combinations of accessories available. $1165.00

AURICON CINE-VOICE

popular-priced 16mm camera that photographs a sound track, perfectly lip synchronized with the picture — to be played on any 16mm sound projector. Single lens model $695.00
Turret model for 3 lenses $784.50

AURICON "SUPER-1200"

16mm sound-on-film camera (self-blimped), with 3 lens turret for "C" mount lenses. 1200 ft. capacity for 33 minute recording time $3319.25

AURICON PAN-TILT professional tripod, weight 27 lbs. $325.00

SUPER 1200

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Cover Your Town for TV

(Continued from page 69)

climax. Sometimes, it's not wise to wait that extra day until things may be a bit more dramatic; by that time, a TV-newsreel cameraman may already be on the scene, and it's too late for you.

Time is of the essence. If a plane crashes nearby, during the night, don't wait until morning, but hustle out to the scene, and very possibly you'll be able to shoot by the light of emergency trucks and equipment. Wait until morning for follow-up shots by daylight to finish your story, but by that time, your beat will already have been scored.

Where you live will play an important part in determining your chances for successful sales. If you live in a metropolitan area, or near a major city, there will probably be few events that you can shoot before professionals get there. But in rural areas, in smaller cities, in isolated locations, you may be surprised to find that you have the field to yourself.

There are salable possibilities in other events than disasters. If you live in the Midwestern wheat belt, you might shoot a story on the beginning of the wheat harvest in your own home town, starting with the dramatic scenes as hundreds of combines move into town in the early morning hours, along with the farm workers. You might include shots of the fields humming with activity as the wheat is harvested, and shots of the men being fed, and the combines being "gassed" right in the field to avoid losing precious time. If this sort of thing is done well, it would make what editors call a good "off-beat" story for their television newsreels. And it's the type of story which editors will seldom assign to their own men.

You might judge from this example that there's a good market for general feature material. That isn't so. Remember that most television news programs run about 14 minutes on the air, and 14 minutes (less time for commercials) isn't much time to cover the news of the entire world. So editors normally require that all stories have timeliness; that is, they must be stories which have just happened, not stories which could have been shot at any time at all. Timeless features—the kind you might think an editor would be happy to have to throw into the program on a day when he's short of material—are useless, because such days never arrive. An editor always has more material than he can use, and he won't use your film unless it is news. Consider the wheat story mentioned above; it gets its timeliness from the fact that it marks the beginning of the harvest. A week later, it has lost its value.

So far, we've been talking only about the kind of stories you might sell, but now we ought to consider the essential technical requirements you must meet if your exposed film is to be usable by television.

First and foremost, it must be 16-mm. True, 8-mm can be enlarged to 16-mm in certain laboratories, but this is time-consuming and usually will result in pictures of inferior quality. For years, all newsreel films were shot in 35-mm, but today almost all television news coverage is done in 16-mm, and the majority of television stations don't even have facilities to project 35-mm films. So 16-mm it must be. If your film isn't 16-mm, it doesn't even pay to call your local television station. Even if they like your subject matter, there's nothing they can do with your film.

Next, your film must be shot at professional speed, 24 frames per second, instead of the usual amateur speed of 16 frames per second. Television projectors can't be altered in speed, as can home-movie projectors, for complex electronic reasons. They are built to operate at 24 frames per second only, and if your films were made at amateur speed, the action photographed will appear jerky and uneven. TV can't do anything to correct this. (The only exception to shooting at 24 fps might be if you were shooting under "impossible" light conditions, such as

How one photographer covers his hometown for TV

Elvin Feltner tells about his equipment and techniques

WITH a proper approach advanced amateur photographers can crack the TV news-film market in any locality with consistent success.

When I first decided to try the news-film field I was working for a small TV station away from home. I knew that Eastern Kentucky would be difficult to sell since there was no primary TV coverage.

The first approach was to write each station within an interlocking area and ask for their news-film needs, if any. I decided to work in one area for news, an area of 20 counties.

One station in particular, WSAZ-TV of Huntington, W. Va., covered this section of Kentucky well. In some sections their signal was the only one received by the hill-top antennas.

They were interested in coverage and we have had a long friendship. Other stations, farther removed, ask for coverage only on rare occasions.

Another consistent market has been the networks. They are always looking for good spot news and superior feature material—but it must be superior.

As for technique, I make a habit of panning only when following action or setting the stage for another sequence. Whenever possible, I shoot with a wide-angle lens to eliminate unevenness caused by hand-holding the camera.

I often call for some desired action while the camera is running. This is done without stopping by asking the subject to follow through with a motion or gesture.

Whenever possible I try to foresee action—this not only saves film for other possible shots but it also gives a better percentage of usable footage.

Another point I personally stress is being in the clear legally, especially as far as trespassing on private property is concerned. Should permission to shoot a story be denied at one location, I merely move from the property involved and shoot the same story from another point.

When traveling within my coverage area, I establish new "contacts" in every uncovered community. These friends can often give valuable tips on both spot news and features.

Elvin Feltner

For equipment, I have a Victor and a Bolex for movies and a Medallist for stills. If the subject is static, yet newsworthy, I do it in stills.

Much of my editing is done in the camera by mentally visualizing the finished sequences. The pattern of good sequence-building is easy to learn.

Your best bet in getting started is to visit the local stations and talk with news department personnel. They should leave an address where they can always be reached.

In small towns and rural areas, TV hopefuls should concentrate on a definite area. Stations received by sets in the area should be queried by letter or personal visit.

After writing the stations in your area, confine your work to one, or at the most, two stations. To work for more can bring numerous conflicts.

The next time the Shriners have a parade, shoot it and send it in on speculation.

If well done, films of this type can sell to local stations. The same subject won't sell time after time, but variations will.

The photographer should realize that to concentrate on spot news is futile. On feature-type films the chances are more numerous and can be planned in advance. Several of my films have been planned three weeks ahead of shooting.

First of all then, get to know what is news and what isn't. Your knowledge of photographic principles, lenses, and films seldom changes, yet your ability to determine a news story often fluctuates as much as human nature.

If you want to get started now, go over today's paper and select some event (it may be a parade or the opening of a city dog pound) and shoot it as if it were for sale. Study this, make corrections, and try again. The second time, you should try for a sale.—

Spiratone does it again!

40 x 40 DUO TRIPOD SCREEN

BEADED AND SILVER

For the first time, you can own **one** screen that has **both** of the desirable surfaces: one glass beaded, the other silver. Through an ingenious mechanism, one turn—and the other surface appears. Until now you had to pay $35.00 and more for a silverscreen alone! The silver surface vastly improves detail and color of slides and movies, is a 'MUST' for 3-D.

Other 40 x 40 Models

DUO BEADED SILVER WALL MODEL 14.95

SILVER TRIPOD SCREEN 12.95

BEADED TRIPOD SCREEN 9.18

$19.95

OTHER BEADED TRIPOD SCREENS

Screens raise and lower on elevating rod, assuring positive alignment. Carrying handles set automatically for balanced carrying. Metal cans have beautiful scratch-resistant finish. Sturdy tripods are plated and have protective rubber tips. Thousands of these screens are in use, not only by amateurs, but by clubs, churches, colleges as well. And look at these low prices:

Sh. Wt. 11 lbs.

Screen Size		Ap.Sh.Wt.
30" x 40"	7.69	10 lbs.
37" x 50"	10.64*	14 lbs.
50" x 50"	12.97*	15 lbs.
52" x 70"	24.95*	

**Screens are shipped by us Express (freight costs collect) within U.S.— other screens P.P. or Express.*

ROOF PRISM FINDER FOR EXAKTA V, VX

with RANGEFINDER PRISM

$27.95 INCL LEATHERCASE

ShipCost 50c.

Latest German import! Replaces the waist level finder, shows unreversed, right side up, brilliant image!

Split image prism rangefinder instantly shows correct focus. Roof Prism Finder without rf **$19.95**; Rangefinder with groundglass, for your Pentaprism Finder **$9.95** (no installation needed)

35MM ANSCOCHROME

ASA 32—DAYLIGHT

20 exp. reloads, in metal cartridges, ea. **$1.50**
3 for $4.10, 7 for $9.50.
Ship. Charges 5c, 10c, 25c.
TRIAL SET: 20 exp. Anscochrome reload, chemicals for processing, all for **$2.62**
TRIAL SET, for ASA 128 ..... **$2.98**
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OFFER 'A' 28 ft. roll, in Easy loader, makes 8 — 20 exposure rolls, incl. proc. by us **$14.95**

OFFER 'B' 28 ft. roll, in Easy loader, 8 cartridges, (2¼ size Developing Kit, 100 glassbinders. *Shpg. Wt. 6 lbs.* **$14.95**

SALE IN OPTICAL GLASS FILTERS

Filters are the tools of the photographer—yet, fine filters, made by the best known manufacturers in the country, need not be costly. Each filter is ring-mounted, and engraved as to type.

Ser. IV	$1.15
V	1.39
VI	1.59
VII	2.98

FREE on request: **Famous Make Filter Compartment Case with purchase of 4 or more Ser. V, or Leather Filterbank with 6 or more Ser. VI filters (incl. polarizing) and closeup lenses. Cases cost regularly $3.50 (Ser. VI), $1.25 (Ser. V).**

"About Filters, Closeup and Minus Lenses" is a booklet crammed with valuable info. Send 25c, or free on request with orders of $3.00 or more.

FOR B&W Lt. and med. yellow, green, orange, haze, red and infra-red.

FOR ANSCOCHROME ANSCOCHROME 10, 11, 12, UV 15, 16, 17

GENERAL Neutral Density 2X & 4X.

FOR KODACHROME & EKTACHROME Haze, Skylight, 2A, 2B, 85B, Type A, Blue 80, 82A, 1D, 2D, 81, 81A, B, C, D, EF

CLOSEUP +1, +2, +3

FOR THE NEW EKTA CHROME 85C, 82A, 82B, 82C

LENS SHADES Ser. V $1.25, Ser. VI $1.50, Ser. VII $3.00

Shipping Charges 1 to 5 filters 10c, 6 or more 30c.

POLARIZING FILTER* SALE

- **Eliminates reflections in water, show windows, landscapes.**
- **The only skylifter usable with Kodachrome, Anscocolor, beautifully emphasizes clouds.**
- **Made of finest quality neutral polarizing material throughout, to fit standard filterholders.**

WITHOUT FILTER — WITH FILTER

SER. V $1.49 SER. VI $1.98

Look again at the prices — it's almost too good to be true! This most useful of all filters, equally important for color and B&W, at a fraction of its regular value!

**Limited supply because model change*

MINUS LENSES for TELEPHOTO EFFECTS

If you have a camera using, or capable of using a bellows or extension tube set, you will want to invest in Minus Lenses for the thrill of taking telephoto shots without buying a regular telephoto lens, or extreme telephoto shots, in conjunction with your telephoto **most useful accessories**, for example, a single Minus 4 lens makes your 135mm telephoto into a 270mm telephoto—varied combinations will produce a variety of effects. Minus Lenses improve the perspective in portraits, too, by lengthening the effective focus length.

Thousands of Exakta, Praktica, Contax S and Leica, Canon owners with reflex housings find Minus Lenses useful accessories.

Minus Lenses are mounted in Metal Rings* and are sold in sets of three (of your selection) or four. **Available in Minus 1, 2, 3, and 4.** *Shipping Charge 10c.*

	PER 3	PER 4
SER. V	—$3.60	—$4.70
SER. VI	—$4.35	—$5.65
SER. VII	—$6.00	—$7.80

CLOSEUPS ARE SIMPLE

and inexpensive, when you buy your closeup accessories from Spiratone, the only firm specialized in low-cost closeup photography equipment.

GOOSENECK LIGHT ATTACHMENT $5.95

With C clamps, fits copy stand or enlarger pole. 2½" bullet reflectors. **$1.00** add'l. *Sh. Wt. 4 lbs.*

FREE with orders over $3.00, or send 25c for CLOSEUP DICTIONARY . . . Contains all needed tables, too.

DELUXE COPYING STAND

Designed by us for use in conjunction with closeup lenses, extension tubes, bellows attachments, to complete with a moderate investment, your closeup and copying equipment. Strong enough for a 4x5, yet compact in storage (two-piece post) and equally well suited for copying, medical, scientific work and movie titling. Camera bracket permits centering of camera over subject. 15x18" baseboard is very practical for large originals. 1½" diameter pole is 38" high. *Shipping Weight 11 lbs.*

$9.95

EXTREME CLOSEUP LENSES

can be used with any camera—with the greatest of ease and with no extra accessories. You can get as close as 8" with a Plus 4, 7" with a Plus 5, 5½" with a Plus 6, 3½" with a Plus 10. You can use two extreme closeup lenses, with a double retaining ring, for even more extreme closeups. With a Plus 5 lens, you can fill the complete 35mm frame when reproducing a postcard; a Plus 10 lens is just right for insects, stamps and coins. Extreme Closeup lenses make macrophotography possible with a tiny investment. **All exc. Plus 10, mounted in metal rings.**

	Ser. V	Ser. VI	Ser. VII
Plus 4	1.75	2.00	3.25
Plus 5	1.95	2.30	3.75
Plus 6	2.25	2.75	4.25
Plus 10	2.65	3.25	5.25
Dbl. Ret. Ring	.85	.95	1.50

CLOSEUP (Portrait) LENSES

bring within every photographer's reach subjects which would be too small if photographed at the regular 3 ft. closest camera setting. Head and shoulder portraits, children's pictures, copy work—a whole new field of picture taking. All Closeup Lenses are mounted in metal rings. Deluxe lenses, made by nationally famous manufacturer, have diopter power engraved on rings.

	Reg.	Deluxe
Ser. IV		1.15
Ser. V	1.00	1.39
Ser. VI	1.25	1.59
Ser. VII	2.00	2.98

Plus 1 focuses from 38" to 20", Plus 2 from 20" to 13", Plus 3 from 13" to 10"—for versatility, you will want set of all three Closeup Lenses. *Shpg. Chgs. 1-4—10c.*

6-PC. EXTENSION TUBE SET

for Kino Exakta, Exa. This set contains two precision-fitted brass adapters and four tubes, 5mm, 15mm, 30mm and 45mm, providing the greatest possible range of closeup work from a 3.4 reduction to a 2.2 magnification ratio. *Shipping Charge 35c.* **Same set but with one FOCUSING TUBE from 40mm to 55mm, alone a $10 value. Complete set $11.50.**

$7.95

4-PC. EXTENSION TUBE SET

for Praktica, Praktiflex FX, Contax, S, D, DA, Pentacon

$6.95

This exceptionally well-made set includes in addition to the usual 5mm, 15mm and 30mm tubes a 45mm tube, thus permitting up to 2X magnification, when the complete set is used; a tiny object, ½" x ¾" can be made to fill the entire 35mm negative or transparency! *Shipping Charge 35c.*

Same set, but with one FOCUSING TUBE, alone a $10.00 value, increasing maximum extension to 100mm. **$9.95**

LEICA, CANON 4 PC. EXT. TUBE SET, INCL. ONE FOCUSING TUBE, $16. VALUE **$10.75**

FOLDING BELLOWSCOPE

$14.95 ppd.

Available for Leica, Canon, Kine Exakta, Exa, Praktica, Praktiflex FX, Contax S, D, DA, Pentacon.

The most useful of lens-to-camera closeup accessories. It weighs only 5 oz., has fine leather bellows and a geared track with a positive lock. A sturdy accurate frame assures proper alignment. An extension range up to 5" is provided, with exposure factors engraved on the track.

COMBI. OFFER: FOLDING BELLOWSCOPE AND PROXISCOPE, both for *(Shpg. Chge. 45c)* **$16.50**

PROXISCOPE SR. $4.95

With elevating action

An absolute must for any kind of closeup and copy work. Doubles up as perfect elevating attachment, with both tripod and camera fittings for horizontal as well as vertical fastening of camera. *Shpg. Chg. 35c*

- **A deluxe version of the most useful camera accessory for every practical photographer.**
- **Permits minute adjustments in a 4½" range on its geared track, with a positive lock at any desired point.**

135mm REFLEX TELE for LEICA, CANON $59.95

For so much less than the price of a telephoto lens alone, you can now own a **complete** outfit for reflex focusing and composing, for closeups and for regular telephoto work. Focus through magnifier on curved groundglass, get **exactly** what you see! With Folding Bellowscope, you have a complete range from closeup to infinity. The needle sharp 135mm f:4.5 Coronar lens has clickstops, is fully coated and color corrected! $59.95 buys 4 pc. outfit, incl. dual cable release. *Shpg. Chge. $1.00*

Spiratone AUX. TELEPHOTO and WIDEANGLE LENSES

FOR COLOR — FOR BLACK AND WHITE

By far the most popular accessory for the 35mm camera owner! Spiratone lenses add to the camera the advantages of telephoto effects for improved perspective in portraits, for moderate distance shots so that the important subject matter will fill the entire negative or slide, and of wideangle effects, for landscapes, and indoors, where space is limited, of greater depth of field.

SPIRATONE LENSES OFFER THESE EXTRAS:

- **Built-in or Separate Filterholder furnished for each (set of) lens(es)**
- **Interchangeability of standard adapters, so that one lens may often be used with several cameras (each lens is supplied with only one adapter—extra adapters are $1.25 each, when suited).**
- **Extra hard S-coating.**
- **Excellent color correction.**
- **Lifetime Service Guarantee.**
- **No change in exposure or lens opening needed.**
- **Comprehensive instructions for simple use—lenses fit your camera like filterholders, require no installation.**
- **Availability of filters — your free choice of any TWO with every aux. lens you buy, selected from these: yellow, orange, green, haze, red, blue. Others $1.00 each.**
- **Availability of MATCHED telephoto and wideangle finders, and a special Universal Finder.**
- **Finders fit accessory clip, can also be used handheld.**

UNIVERSAL AND CLOSEUP (+1, +2, +3) FINDER, the most versatile finder ever made, matched to your **normal** 50mm or 44mm lens, telephoto and wideangle Aux. Lenses. Has parallax correction to 10', for use with +1, +2, +3 closeup Lenses, and from three feet to infinity **$9.95**

Each lens in leather case (incl. 2 filters) **$16.95**
Shpg. Chg. 85c

Set of both lenses, in double leather case (including 4 filters) **$29.95**
Shipping Charge 60c

Each Finder, telephoto or wide-angle, both for $7.49 ..... **$3.95**

Universal 44mm finder, for Contessa, Bolsey, Sig not etc. reg. $.98 ..... **$4.98**

Accessory Clip for Argus C3, easily installed **$1.00**

Accessory clip, easily glued to most cameras 75c

GREAT NEWS

Spiratone aux. telephoto and wideangle lenses, greatly improved, are now available at the same low prices for 2¼ x 2¼ Twinlens Reflex Cameras—Rolleicord and Rolleiflex bayonet mount (f:3.5 only), Cirroflex, Graflex 22, Richoflex, Kodak Reflex. For twinlens users seeking a moderate increase or decrease in focus length, Spiratone aux. lenses add greatly to the versatility of their camera, with

SPIRATONE AUXILIARY LENSES ARE AVAILABLE FOR THESE 35MM CAMERAS AND MANY OTHERS

ARGUS C3, C4 — EDIXA
BANTAM — KODAK 35
BOLSEY — MERCURY
CONTAFLEX — RETINA
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GERMAN ALL METAL RANGEFINDER $2.95

Employs super-imposed image system for rapid, accurate focusing from 2 feet to infinity! All-metal construction, leather covering, modern styling. Specify feet or meters. **Case 40c.** *Shpg. Chg. 10c*

Up to 70% off! 2x2 Color-Slides for as little as 3c!

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Yes, these famous sets of 2 x 2" full color slides of which hundreds of thousands have been sold at $1.00 per 10 are now brought to you at less than half price! Scenics from all over U. S. and many foreign countries, and children's stories. Each number contains 10 dif slides. **Choose from these:**

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1 Shrines, Wash., DC
3 Rodeo in Calif
4 Block Island
7 From the Empire State Bldg
8 Wash., D. C. Landmarks
9 Times Square to Central Park
13 Bryce Canyon
14, 14A, 14C Yellowstone
15 Washington, D. C.
18 Big Bend Nat'l Pk
21 Hialeah Racetrack, Florida
22 Miami Bus. Dist.
24, 24B Sightseeing in Florida
25 Hollyw'd to Frisco
25A California
27A N. Y. Midtown
28 NYC Financ'l Dist.
29A Williamsburg, Va.
29B Virginia
31 Chicago, Illinois
35 Kansas City, Mo
40 Atlantic City, N. J.
44A Mackinac Isle Mich.
54 Southern France
60 Madrid, Spain
70, 71, 72 Ireland
81, 82, 83, 84 Rome, Italy
100 Pyramids to Cairo
101 Cairo, Egypt
110, 111 Bombay, India
120, 121 Lisbon, Portugal
130 Alaska
140 Switzerland
145 Austria
151 Istanbul, Turkey
160 Athens, Greece
191 Havana, Cuba
202, 203 Canada
208 Australia
211 Haifa, Tel Aviv, Israel
C-4 Story of Pinnochio
C-9 Tarzan
C-10 Fun at the Fair
C-11 Snow White
C-12 3 Caballeros

GROUP B

2 N. Y.'s Hudson River
30 Great Smokey Mts.
32 Notre Dame Univ.
34 Colorado & Estes N'tl Park
39 Wisconsin Dells
40A Atlantic City
80 Rome, Italy Landmarks
85 Vatican City, Religious Shrines
87 Inside Vatican City
88 Genoa & Columbus
180 Mexico, Tourist Paradise
181 Touring Mexico

All slides have subject matter imprinted.
Any two sample sets (20 slides) $1.35 ppd
GROUP A: Any 4 sets (40 slides) $2.40—Any 8 sets (80 slides) $4.00
GROUP B: Any 6 sets ($2.25—All 12 sets (120 slides!) $3.60
Shipping Chges: 4-6 10c, 8-12 30c

All prices include excise tax. Postage and insurance MUST be prepaid, even when no shipping weight is stated — overpayment will be credited in full. Everything listed is brand-new (unless otherwise stated) and fully guaranteed against defects. 25% deposit on C.O.D.'s. Items marked 'Free', 'Premium' or 'Bonus' MUST be requested at time of purchase. Foreign orders welcome — slight extra handling charges apply.

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Size. Lots of 3—Ea.	Kodachrome	McGregor Color	Dynacolor
8mm x 25' dble. roll	$3.00	$2.40	$2.30
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16mm x 50' mag.	6.75	6.35	6.25
16mm x 100' roll	8.55	8.85	9.75
35mm x 20 exp.	2.70	1.85	1.75
35mm x 36 exp.	4.00	2.75	3 for 6.90

1957 DATE

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1957 dated, fast, fine grain, panchromatic ASA 50. Prices include new fast processing service.

8mm x 25' dble. roll	$1.10
8mm x 100' dble. roll	3.50
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16mm x 100' roll	2.75
16mm x 100' Ansco	2.50
16mm x 100' Kodak Plus X	2.95
16mm x 50' roll, Plus X	1.65
16mm x 100' Kodak Super XX	3.00
8mm Mag. B & W	2.00

BUY SIX . . . GET ONE EXTRA FREE

COLOR FILM MFR. PACKS UNDER AWON LABEL!!!!

Late 1956 Date. Price includes processing & mtg. All Kodachrome filters can be used with this film.

8mm x 25' dble. $1.98 ea.
3 for $5.75 . . . 6 for $11
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8mm dble. or 16mm x 100' roll $5.25 ea.; 3 for $15
SPECIAL—35mm x 20 exp. Tung . . . . . 4 for $5

FREE!

With every order of $25 or more—you get a FREE 1-year subscription — $4 value—to Modern Photography or U. S. Camera (specify).

FRESH AERO EKTACHROME ASA 50

35mm x 20 exp $1.55 ea.
4 for $5.25
35mm x 36 exp $2.25 ea.
Processing included
BUY SIX—Get One FREE
35mm x 40' bulk . . $5.35
35mm x 75' bulk . . $7.95
35mm x 75' plus 4½ rol. devel. kit $11.95

ANSCO COLOR

1956 Date • Day. or Tung.

35mm x 100' . . . $21.50
35mm x 50' . . . 12.49
35mm x 27½' . . . 6.95
35mm x 20 exp. in metal cart. . ea. 1.20
6 for $6.00; 12 for $10
#120 Day. . 60¢ ea. 6/$3
#620 Tung. 60¢ ea. 6/$3

Ektachrome For Movie Fans

8mm x 100' . . . $4.75
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3 for $13.25

MOVIE—QUANTITY DISCOUNTS

B&W ASA 50 or 100. 16 x 100' cam. spool. No proc. Add postage.

SIZE	54 Rolls	27 Rolls	15 Rolls
16mm x 25'	$8.95	$4.95	$2.75
16mm x 50'	19.95	10.95	5.95
16mm x 100'	49.50	29.50	17.95

AERIAL FILM

LINAGRAPH Ortho Weston 24, 35mm x 100', 98¢ ea.
3 15/16" x 61" . . . 3 for $1.10
INFRARED (Weston 50) 9½" x 75" . . . $4.00
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KODAK TRI-X (ASA 200) 5½" x 50" . . . 98¢ ea.
5¼" x 20" . . . 2 for $1
KODAK XX 5¼" x 9" . . . 3 for $1
5¼" x 20 . . . 2 for $1
5¼" x 50" . . . $1.75 ea.
9½" x 75" . . . $6.95 ea.
9½" x 200" . . . $9.95 ea.

AERO EKTACHROME ASA 40

with 1½ gallon processing kit

5¼ x 20' . . . $6.95 5¼ x 40' . . . $9.95
9½ x 40' . . . $16.95 35mm x 37½' . $6.95
FREE Compensating Filter with any of above!

35mm Fresh Bulk Negative Safety

Kodak Plus X, Sup XX, Kodak Weston 24 or DuPont #1 or #2
100' . . . $1.98 ea. 400' . . . $7.50

35mm x 20 Exp. Cart.

Plus X, Sup XX, Tri-X, Infra Red
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4 x5 Kodak XX Film Pack . . . 3 for $3.75
Kodak Lantern Slides 3¼ x 4 (50 plates) . 2 for $1
4 x 5 Ansco Super Pan Portrait (25 shts.) 3 for $3.50
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8 x 10 Du Pont Arrow Pan (25 shts.) . . . $2.95
11 x 14 Contrast Process Pan (20 shts.) . . . $1.40
11 x 14 Matrix (10 shts.) . . . $1.40
4 x 5 Kodak Contrast Proc. Pan . . . 98¢
4 x 5 Kodak Panatomic X (25 shts.) . . . 98¢
4 x 5 Kodak Contrast Process Ortho (25 shts.) . 98¢
2¼ x 3¼ Dover (ASA 50) (25 shts.) 3 for $1.20
All above O.D. in original pack
• Cardboard Stereo Mounts, 100 for . . . $1.50
• Ansco 35mm Cardboard Mounts, 100 for . $1.00
• Projection Paper, O.D. 35mm x 100' #3 . 98¢
• Daylight Bulk Film Loader & 3 carts . . . $4.95

BULK KODACHROME

This film has been cut from 400' rolls and is camera spooled, ready for your camera.

16mm x 100' roll . . . $5.95
3 for $17.25; 6 for $33.95
16mm x 100' O.D. . . . $2.95
16mm x 50' Mag. O.D. in Orig. Kodak Pack, $3.95; 3 for $11.50; 6 for $21.95
Kodak Proc. Incl. for All

Polaroid Film, Type 51 . . . 6 for $5

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at night, outdoors, in an emergency, where you had to slow down the shutter speed to get a longer exposure, 1/30 second for 16 fps, instead of 1/50 for 24 fps.)

If you have to, you can use any black-and-white film you have handy, but not color (because too much time is lost in processing). But you will do well to avoid the so-called black base emulsions, that is, motion-picture films coated with an anti-halation backing. For example, only Cine-Kodak Super-X and Super-XX fall into the objectionable category. These two are among the finest motion-picture films made, but for newsreel purposes they are not suitable. Only Eastman Kodak laboratories are equipped to remove this backing as a regular part of their processing. Other labs can do it, but only at considerable effort and expense, as the backing contaminates the chemical solutions for other films which will follow yours through the continuous-action tanks. Since newsreel films are processed in the newsreel's own labs because of the extreme urgency required, your use of black-base film will cause delays and difficulties in processing. If you can possibly avoid it, you will be better off. Any blue-base film is preferable for newsreel purposes, either reversal or negative types. These films are plainly marked "blue base" on the cartons. You can use any of the Eastman blue-base films, such as Plus-X, Super-XX, or Tri-X. Or you can use the Du Pont films known as 930 or 931, which are sometimes sold under the Kin-O-Lux label.

As to the camera work, there should be absolutely no panning. You learned on the day you bought your movie camera that panning can ruin any films, and indeed, this rule holds true especially for news films. Each shot should be as steady as possible. If you can't get all of the scene into one shot, then take several, each showing a portion of the scene, or move back farther to get it all into your finder. Better yet, use a wide-angle lens.

The accompanying illustrations show how a professional TV-newsreel cameraman works, and indicate what shots he knows are essential to the story. Long years of experience in daily news coverage have taught him as second nature which shots he must get, which shots might be useful to the film editor, and which shots are worthless. He tries to keep his shooting to the minimum, because the less film shot, the lower the cost, the quicker the processing, and the quicker the editing.

Your own stories shouldn't exceed 300 or 400 feet in length. Sometimes, 100 feet will be all that's needed to tell the story; if so, stop right there and don't waste your film, money, and time. Editors don't like to handle stories that are overshot.

As soon as you finish shooting, contact the editors immediately. If you think your film has possible national interest, telephone Long Distance collect to the nearest bureau of any of the four national news organizations we mentioned at the beginning of this article. Ask for the "Television News Assignment Desk." These organizations have their headquarters in New York, with bureaus in Chicago, Los Angeles, and Washington. Some also have bureaus in Dallas and Kansas City. In most cases, they will accept a collect call; if they don't, pay the charges yourself, and they'll freqently reimburse you, even if the film is unacceptable to them. These news desks are open 24 hours a day, every day in the year. If your film has local or regional interest only, phone the Television News Editor or your local TV station.

Identify yourself as an amateur photographer. Tell the editor about your story, how much film you have, the type of emulsion, and it won't hurt to mention that you shot it at 24 frames per second, and that you haven't panned. This may reassure him about the quality he can expect. Tell him you're prepared to ship it immediately, unprocessed, payment to be at his usual rates.

Let me say right here that editors are usually honest men. They have been at their jobs for years, and from your description, they will be able to judge pretty well whether your film will be acceptable to them. If they decide it's likely to be good material, they'll take it. If they're uncertain, they may ask you to ship it "on spec," payment to be on acceptance. In such cases, they're not trying to take advantage of you, but merely to protect themselves against the possibility that your film, which, at this point, nobody, including yourself, has seen, may be underexposed or badly shot.

If they tell you they can't use it, they'll probably tell you why. The commonest reason will be that it just isn't the sort of material they can use. That means that it doesn't fit the style which they have established for their service, probably because it isn't timely enough, or because it doesn't have enough national interest, in their opinion, to hold the attention of TV viewers across the nation. Depending on their response, you'll have to decide whether to make additional calls to other national TV-news organizations, or local stations, to see if you can do better elsewhere.

When I said that nobody has gotten rich from shooting TV-news films, I meant just that. Union scale (set by contract between the IATSE cameramen's unions and the TV-news organizations) is $67 daily plus expenses, and if your story is acceptable, that figure will probably set your payment. Some organizations pay exactly that amount—$67—others pay from $50 to $100 for the story, depending on its value and interest. In unusual cases, special bonuses are added. In addition, they'll replace your film, or pay you for it, even if your film is unacceptable after they've looked at it. Occasionally, they'll pay any special expenses you may have had, but you should always clearly state these expenses to the editor and reach agreement on this point.

In TV news, shooting the story is half of it. The other half is shipping it. If it doesn't get there in time for quick release, its value may be lost.

All of the TV-news organizations fol-

PERFECT EXPOSURE

Automatically yours with the one and only...

BEWI AUTOMAT "A"

AUTOMATIC EXPOSURE METER

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"AUTOMATIC CALCULATOR"

JUST TWO SIMPLE STEPS:

1. Press Button — hold a second
2. Release — and get correct reading

The advanced amateur, the top professional will appreciate the way the BEWI AUTOMAT "A" saves time by giving the correct reading swiftly and accurately. The very beginner can start right off and get crack results with the BEWI AUTOMAT "A". The "automatic calculator" sets the shutter scale speed to the corresponding diaphragm scale so that exposure time and stop can be read off directly and immediately. No arithmetic, no scales, no tables . . . nothing but the correct exposure every time, for stills and movies, color and black and white.

The BEWI AUTOMAT "A" gives correct lens openings and speeds for all shutters, including the new COMPUR Light Value shutters. Direct readings for both reflected and incident light. Lens openings, f1.5 to f/22, and speeds from 1/100th to 4 full minutes. With your eyes shut tight you can get the correct reading for perfect exposure . . . try it and see for yourself. Only $29.50, complete with Incident Light Attachment, Neck Cord and Dustproof Plastic Box. Special Leather Case, $2.95.

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Camera, case, and flash
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Camera, case, and flash
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low the same procedure. Box your film securely; include right in with the cans of film a description, roll by roll, of the scenes photographed, including identification of names of people shown, and clearly mark your own name and address. Send it to the address which the editor has given you over the phone. (To save time, he may tell you to ship it to Chicago or Los Angeles instead of New York). Mark the box in large letters "NEWSREEL FILM. HOLD AT AIRPORT." Then take it directly to your local airport and ship it Air Express collect. Find out from the Air Express clerk the number of the flight on which it will actually leave. If it must be transshipped to another flight en route, find out the number of the connecting flight to which it will be transferred. Then send a collect telegram to the editor, reading something like this: "300 FEET DU PONT 931 AIRPLANE CRASH SHIPPED ABOARD TWA FLIGHT 97 ARRIVING NEW YORK 8.37 PM TONIGHT WAYBILL 93-28-06." You can get the waybill number from your express receipt. Including it in the telegram will save at least half an hour in locating your shipment at the destination, because all the TV-news organizations have motorcycle messengers who meet the planes at the airport and will be looking for your particular shipment. That's the reason for marking the address label "Hold at Airport." To save time, the shipment will be picked up there instead of being delivered.

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contests and markets

CONTESTS

THE 9TH INTERNATIONAL ZOO PHOTOGRAPHY CONTEST, featuring photographs of animals taken in any recognized zoo in the world, has been announced by the Nature Camera Club of Chicago and the Chicago Zoo. Black-and-white prints must be 8x10 or larger and mounted on 16x20 mounts; however, foreign entries may be submitted unmounted. In the color division, 2x2 to 3¼x4½ slides are requested. Prizes, duplicated in both classes, are as follows: 1st—$50, 2nd—$25, 3rd—$10, and 20 honorable mentions at $5 each. In cases where winning photographs were taken at the Brookfield Zoo, prizes will be doubled. The necessary entry blanks are available from the Chicago Zoological Park at Brookfield, Illinois, and must be postmarked no later than the contest deadline, September 15th.

THE CARLING CAMERA COMPETITION, which is being held in conjunction with the Massachusetts Department of Commerce, is awarding $6,000 in prizes for photographs of a promotional nature pointing up the vacation areas and scenic attractions of Massachusetts. The two top prizes will be $1000 Savings Bonds for the best pictures in black-and-white and color, with 223 additional prizes in each classification. An unlimited number of black-and-white prints and color transparencies may be submitted by entrants. Black-and-white print sizes requested are 5 x 7 and 8 x 10; color transparencies of any size are eligible. The contest closes November 15. For entry blanks and full information, write the Massachusetts Department of Commerce, 334 Boylston St., Boston, Mass.

GAINES DOG RESEARCH CENTER is offering prizes of $500, $250, and $100, respectively, to the three top winners of their 1955 dog photography contest. Photographs must have human interest and although people may appear in the picture the dog(s) must be the dominant feature. Contestants may submit an unlimited number of unmounted, untouched black-and-white prints of any size; only prints accompanied by sufficient postage will be returned. For further information write Gaines Dog Research Center at 250 Park Ave., New York 17.

CARL ZEISS, INC., is sponsoring a contest for black-and-white photographs taken with postwar models of Zeiss Ikon cameras. A maximum of six pictures may be entered. They will be judged on technical excellence and general interest by a panel consisting of Don Bennett, APSA, *PSA Journal;* Jacob Deschin, FPSA, *The New York Times;* Kip Ross, *The National Geographic Magazine;* and Dr. I. Schmidt, FPSA. A total of 32 prizes include a first prize of a Contax IIIa with 50-mm Sonnar *f*/1.5 lens and built-in exposure meter, second prize of Contax IIa with 50-mm Sonnar *f*/1.5 lens, and two third prizes of a Contaflex II with built-in exposure meter. Full information and rules and entry form may be obtained from Zeiss Ikon dealers or by writing Carl Zeiss, Inc., 485 Fifth Ave., New York 17, N. Y. Deadline is November 15.

BOYS' LIFE magazine opened its 1955 photography contest May 1 to boys and girls who will not have passed their 19th birthday by September 15, 1955. Over $2,000 worth of photo-equipment prizes will be awarded among the seven following groups of entry: Color Slides; Camping and Hiking; Action in Sports; People; Animals; Landscapes and Buildings; Trick and Gag photos. Photographs will be judged within each class of entry but duplicate prints may be entered in any class under which it can qualify. No more than one prize may be won by a contestant in each category. Black-and-white photographs must be no larger than 8x10" and all entries must be accompanied by the following information: Name, address and age; type and make of camera, film, flashbulbs, and filter used; when and where picture was taken and title of picture. Model releases must be available on request for any recognizable people in the pictures. Photographs and transparencies will be returned only if covered by return envelope and postage. Submissions to the contest and requests for further information should be sent to Boys' Life Photo Contest, 2 Park Avenue, New York 18, N. Y.

AMERICAN MUSIC CONFERENCE has announced its contest to choose six winning photographs of amateur musicians participating in their hobby. Top prizes are $250, $150, and $100, along with three $25 prizes. Payment of $10 will be made to any non-winners whose photographs are used for publicity purposes. Contestants may enter an unlimited number of photographs of any size before the contest deadline, January 15, 1956. Submissions, as well as requests for further information, should be sent to: Photography Contest, American Music Conference, c/o the Philip Lesly Company, 100 W. Monroe St., Chicago 3, Ill.

MARKETS

AUTO LAUNDRY NEWS is looking for amateur photographers throughout the United States who can supply them with photographs of minute-car-wash establishments. Prices from $5 to $25 will be paid, depending on the use of the prints. Send prints and requests for further information to Mr. Robin King, editor, *Auto Laundry News,* Capuchinas 55, San Jose, Insurgentes, Mexico 19, D.F.

STAMOS PHOTOGRAPHY SERVICE, 100 Oxford Ave., Buffalo 9, N. Y., is looking for cheesecake photographs in both black-and-white and color. $5 will be paid for accepted black-and-white prints no larger than 4x5 and $10 for 2x2 color transparencies. Exclusive rights are not required and unused material covered by postage will be returned.—▶

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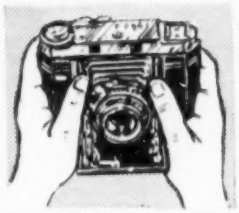

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By CHARLES B. BLOCK

On set during the shooting of *Pete Kelly's Blues*, Jack Webb gives directions to his cameraman and actors.

A talk with Jack Webb

Noted actor and director gives his ideas on amateur motion-picture making

Photographs by DON ORNITZ

Before camera is placed in shooting position Webb and cameraman Hal Rosson check composition through viewer.

Webb plays part of Pete Kelly, trumpet player, in film. Alone, he rehearses for part.

ALL of Stage 12 at Warner Brothers Studio was in darkness except one corner. There, a set had been rigged for one of the scenes in *Pete Kelly's Blues*. The set was a shabby bedroom in a rooming house in Kansas City, the year, 1927. Centered in the room, with the back of its headboard to the camera, was a bed, flanked on one side by an end table and lamp, on the other side by a small gas stove with an old-fashioned coffee pot on it.

The attention of everyone seated in the twilight area rimming the lighted set was fastened on Jack Webb, the slim, tense, quiet-voiced man crouching on the floor next to the camera and talking with cinematographer Hal Rosson, who was peering through a viewfinder.

After about five minutes, during which time the camera was raised to bed level and the lighting was changed, Jack Webb strolled over to the bulky figure seated in front of us.

"We'll have a rehearsal in a few minutes, Andy, and then we'll try to make this one before breaking tonight."

Patting Andy Devine on the shoulder, Webb came over to us, leaned against the wall of his dressing room and we proceeded with the interview.

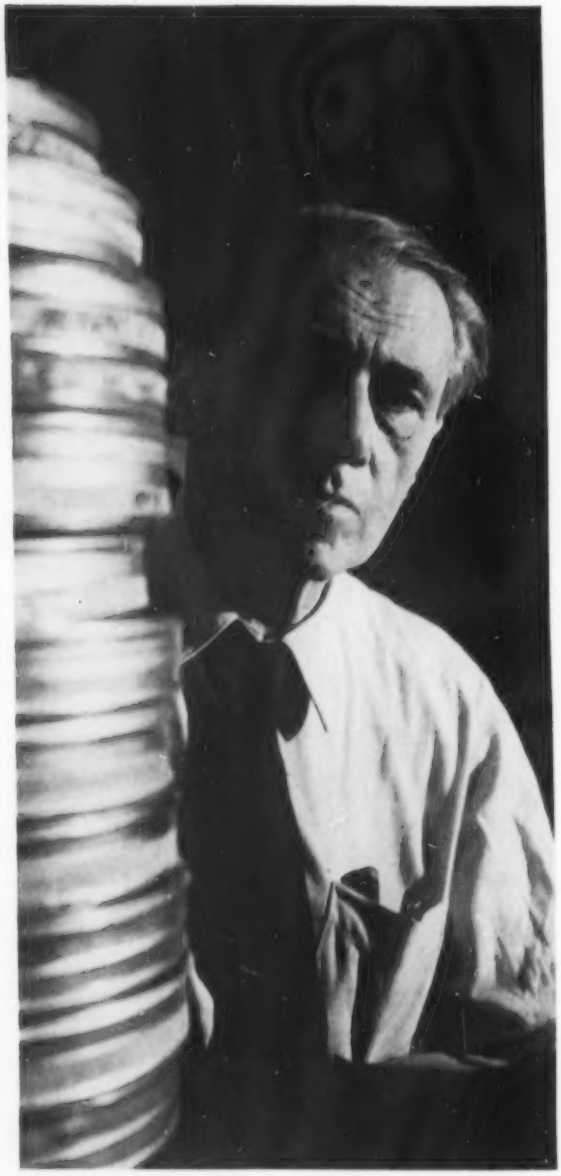
Do you think that amateur experience is a prerequisite for a career in the motion-picture industry?

I don't see any alternative. There is no substitute for experience in any field, and during your apprenticeship and schooling period, regardless of how talented you may be, you are still an amateur. We had a situation in the motion-picture industry this year where a film produced by two amateurs, Dennis and Terry Sanders, won an Academy Award and is now being released by a major company. Despite the undisputed quality of the film, *A Time Out Of War*, the Sanders boys were students at UCLA when they made it and were undoubtedly amateurs. My point is that the word "amateur" need not signify a lack of ability. An "amateur production" such as *A Time Out Of War*, may be superior to the majority of professional productions, but one (*Continued on page* 116)

Strip of film from previous day's shooting is examined by Webb as soon as it arrives from the processing lab. He gives scene a quick check for color, lighting, and composition.

When not acting in film, Webb, dressed in costume, gives directions to actors and equipment crews from sidelines.

Photographs by ALAN H. PESETSKY



Famous director Hans Richter has produced such films as the award winning *Dreams Money Can Buy*. He places great emphasis on learning by doing at CCNY.

School for film makers

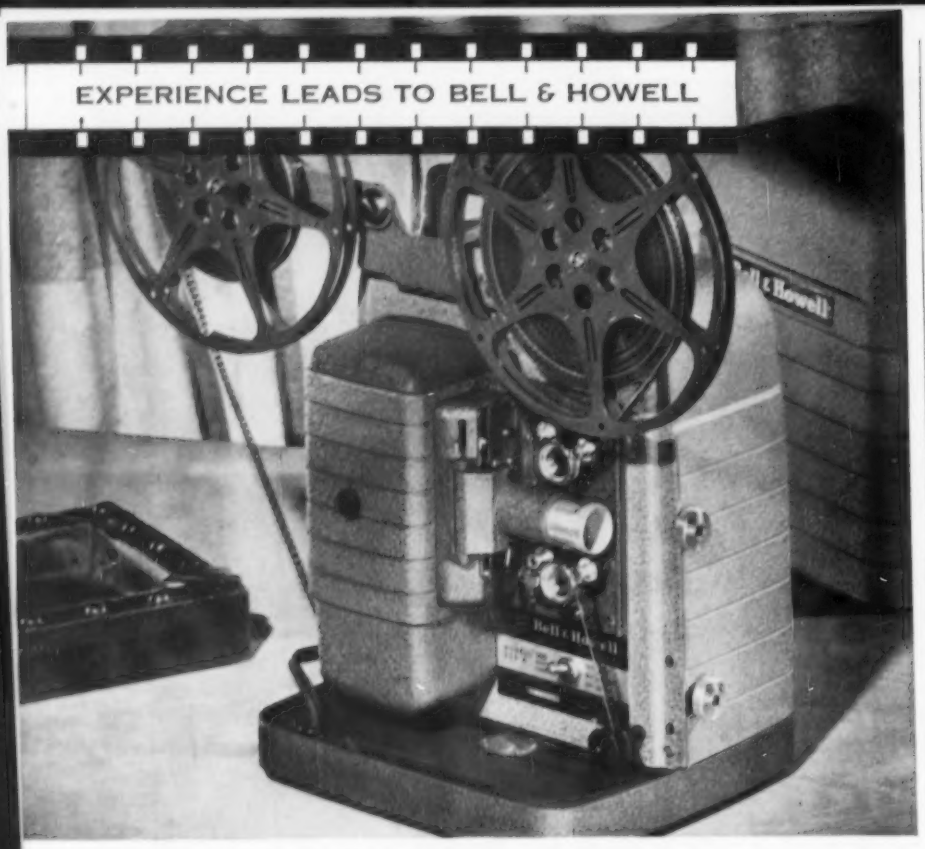
Professor Hans Richter tells about his CCNY Film Institute

This article on Hans Richter and the Institute of Film Technique of The City College of New York, will be followed in future issues of POPULAR PHOTOGRAPHY *by a unique motion-picture short course written by the highly experienced faculty of CCNY. In four consecutive issues, each of the following areas will be covered: script writing, motion picture production, camera technique, and film editing. The "lecturers" will be men who have made outstanding names for themselves in the motion-picture industry as well as the academic world.*—The Editors.

IF YOU should take a walk around the CCNY campus with Professor Hans Richter, Director of the Institute of Film Technique, you would get many ideas on motion-picture making, teaching, sociology, and psychology. Here is a man who is a success as a (*Continued on page* 117)

Students use best professional equipment available in making film projects. Remodeled building serves as new home of Film Institute.

←
Practical courses in all phases of motion-picture work are required for students majoring in film making. From left to right, students check film in editor, dub in sound, and splice film. Teachers are hand-picked, professional men.



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A Talk with Jack Webb

(*Continued from page* 112)

should be prepared to prove his ability as an amateur before seeking a niche in the profession.

You are considered a "perfectionist" in your field. How did you earn this reputation?

This may be semantic quibbling, but I don't think the word "perfectionist" is the correct one to differentiate me from anyone else. We are all striving for perfection, and very rarely achieving it. The old bromide about the movie audience having the IQ of an 8-year-old has long been outdated. Audiences today are increasingly discerning. Bromides and platitudes, pictorial and dramatic, no longer suffice, in fact, they will ruin a film. I believe you can't make a picture good enough for today's audience, but I hope one day to prove myself wrong.

Do you find producing films for motion-picture release different from producing for television?

Definitely! Motion pictures and television are two entirely different mediums which are alike only in that they employ some of the same tools. Undoubtedly working in television gave me much valuable experience which has been helpful in the motion-picture work we are now doing, but our approach to *Pete Kelly's Blues* is vastly different from the approach to the *Dragnet* series.

When shooting for TV it is always necessary to keep the size of the screen and the intimacy of the home audience in mind. In *Dragnet* we employ many facial close-ups and underplay our dramatic scenes because we feel that the medium calls for these techniques. In *Pete Kelly's Blues*, however, we are shooting in CinemaScope for a wide screen and a theater audience. All our efforts are directed to taking full advantage of the added dimensions offered us by use of color, CinemaScope lenses, and stereophonic sound. I might add that these factors should also be kept in mind by the home-movie enthusiast who is also shooting for small-screen, intimate family viewing.

How do you build suspense in your films?

The pace of the film is most important in building suspenseful sequences, and film editing is most important in setting the pace. Anyone interested in creating moods should familiarize himself with the techniques of film editing. Much of the suspense in *Dragnet* is built on sequences which are basically dialogue with the film being edited in a series of fast cuts flashing from one face to another in ever-increasing speed until a staccato, almost breathless, effect is built. In order to get the most out of the film, it is essential that the film editor have the material with which to work. Something that the home-movie maker should learn is that film is the least expensive item in the making of movies—even footage for personal use. It is always less expensive and more satisfactory to overshoot than to undershoot and a three-to-one ratio is minimal in my opinion. With this amount of footage you can create effect and moods in editing

which would be impossible with camera work alone.

What phase of camera work is most important to the amateur?

Lost in a maze of technical details—changing lenses, emulsions, lights, color complexities, and other problems—the average amateur movie maker ignores the foremost production mission—to tell a story with his camera. From my point of view, the singularly most important task of the amateur is to develop a talent for facility with his camera. To utilize his photography intelligently, he should plan his shots to the extent that they have true meaning.

The beautiful panorama, the elongated pseudo-artistic views of inanimate subjects, the cocked turret head, and the various pictorial cliches belong in the mumbo-jumbo world of still photography. For the motion picture, the obvious objective is fluidity. Consider the relationship of one shot to another. Is your photography concerned with a specific continuity of scenes? If not, you're in danger of wasting your film on static subject matter that could be recorded better with a Rolleiflex. Take the family picnic, for example. If you wish to photograph an outing at Pop's Willow Lake, start your continuity at home with the preparations. Progress until you have shown the events surrounding the trip—the family baseball game, father at the barbecue, brother and his cronies playing gin rummy on the picnic table, the dog begging for food from i .tle sister, big sister listening to the portable radio while munching a hot dog. Splice these scenes all together, and they really tell the story of the family picnic.

I repeat, telling a story is the most important phase of motion-picture work.—

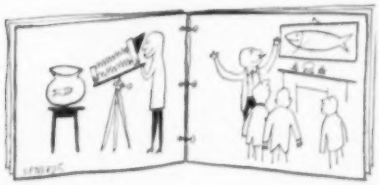
School for Film Makers

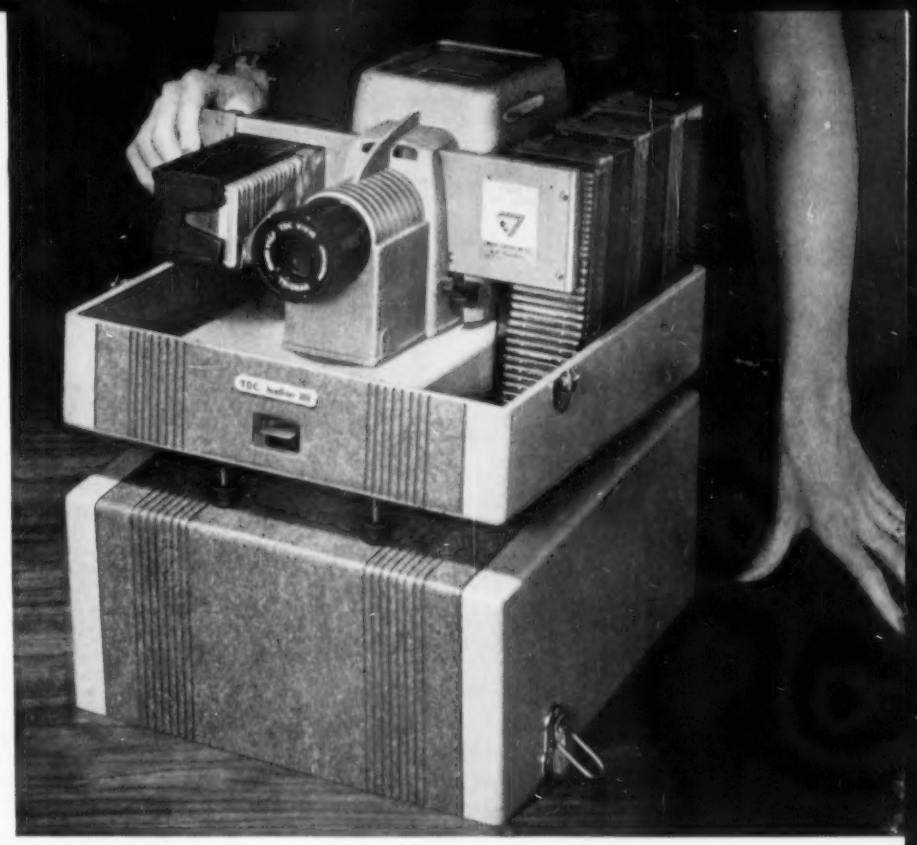
(*Continued from page* 114)

professional film maker. His *Dreams That Money Can Buy* received international awards. Here is a man who is responsible for building one of the leading documentary film institutes in the world.

Should the privilege of sitting in on some courses under the motion-picture Institute be granted to you, you would see immediately how Mr. Richter has influenced the course outlines. The highly practical lectures are given by men who have proven themselves in their own areas of film making, and there is great emphasis on learning through doing.

We had the privilege of spending several afternoons with Mr. Richter, during which time we did much walking and talking. One of the highlights of our visits was a trip through the remodeled building which is now the new home of the film institute at CCNY. Professor Richter was eager for us to see every





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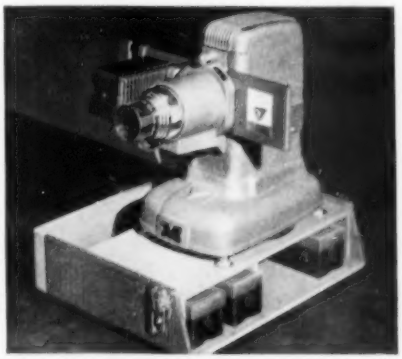

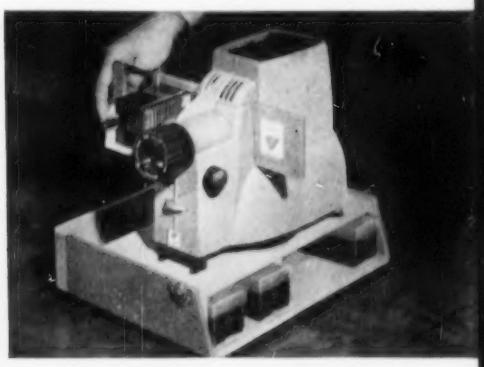

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room of the well-equipped, roomy building. The building was one of his dreams-come-true.

From our notes, we compiled the story of Professor Richter and the Film Institute. This is Mr. Richter's own story, told with as few variations as memory and hurried notes permit:

Film making is a passion. "If it were not a passion," an old-time film maker, Joe May, once said, "we would have no films." That is still valid today. It is confirmed to me by the students every term anew, the students who take film courses at the Film Institute at City College for a degree, as well as by their instructors. I see it again in the evening students who come to us after a day of hard work to study and learn this new visual language, and often stay with us after class till the early hours with their passion undiminished.

What is so fascinating about film making? It is a relatively easy access to creative expresion. There is so little creative freedom in the life of most people and the less there is the greater the urge to express one's self. That is what thirteen years of teaching films to young, middle aged, and old people have taught me here.

In these thirteen years I have met housewives, teachers, subway conductors, librarians, stock brokers, psychologists, union officials, insurance agents, dentists, and missionaries—people from every walk of life. I have met professionals who come to the Institute for brush-up courses in camera work, editing, in sound, in directing, and students who are on their earnest way to become professionals. I have met here at City College foreign students from all over the world: Africa, India, the Philippines, Italy, Greece, Persia, Turkey, Argentina, France, Germany, Israel, Austria, and other countries. I have met students who just wanted to know what to do with the films they took on the trip last year, at a family gathering, or a wedding, as well as the young enthusiasts who just want to learn, in 15 easy lessons, how to become a Hollywood producer making $200,000 a year and winning Academy Awards.

On such a background the Film Institute has grown steadily over the last 13 years. At first I had 19 students in two classes. Today we enroll between 450 and 500 a year in the day and evening sessions. We started with evening-session courses only. In 1948 we added daytime sessions and became part of the regular curriculum, offering a B.A. degree in films.

There was little equipment available in the beginning during the war years. We had to sneak in and out of the makeshift cutting rooms and studios during the night. Today we have all the necessary 16- and 35-mm cameras, 16- and 35-mm Moviolas, and fully equipped cutting rooms.

This term we moved into our own three-story building on the College's new South Campus. This building, newly remodeled to suit our special needs, has everything we could dream of or ask for: two big studios, large projection room, animation room, titling room, three editing rooms, and a fully equipped sound stage.

The Institute has come a long way since it was founded in 1941. At that time there were not enough people to fill the Government's war need for trained workers to produce information films. The direct and immediate aim of the College was to help fill this gap and to train people professionally and as quickly as possible. The Institute's program was devoted exclusively to how to make and use the documentary film. Students were trained and got jobs.

As the war went on this purpose diminished. Jobs became scarcer, but amazingly enough, the Institute at CCNY, after a short decline, grew steadily. More students registered, more courses were asked for, and more were given. Before the war ended, the Institute's enrollment expanded to 350 students.

One of the explanations for this phenomenon is the fact that only half the student body wanted to be professional in the usual sense of the word. They were already working with film in government agencies, small companies, laboratories, or were assigned to film jobs in the Armed Forces. They wanted additional training to improve their salary status, or were just interested in knowing more about the medium of which they knew only a little. But what was to be done with the other half of the student body that did not intend to prepare for jobs?

Many of them had made films before they came to the Institute, and they would go on making them after they left it. Film making is a passion, and this is true not only for professionals but for non-professionals as well. But productions, as they've been shown to us in the classroom, have been, with few exceptions, of poor quality.

One of our students, a cook, spent night after night, when his daily work was done, shooting movie film of different foreign cultural meetings and dances. He was helped by other students. But his well-intentioned films consisted almost exclusively of long shots.

Another student, a stockbroker with medical interest, made surgical films, very well photographed but all in close-ups. One student, a union official, showed a film about Civilian Defense which was not intelligible unless it was explained. A young woman, panning up and down through Mexico, didn't give us a chance to look straight at a single shot. Another student offered a film about exotic flowers, which was, despite the love which went into its making, just a series of beautiful stills. There were films made about marriages, landscapes, autos, children, strikes, and many of them had the touch of reality which, if pursued professionally, would have made real films.

Letters come in to us. A man who worked at a postoffice for 32 years asks whether the study or the use of the motion picture could bring a little color into his gray, monotonous life, and whether it could help him enjoy life a little toward its end. A woman clerk at the reception desk of a hospital wanted to know whether she could learn enough in our courses to make little films about the things she observes in her daily work.

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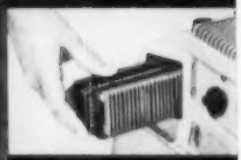

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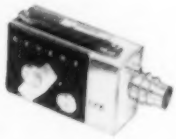

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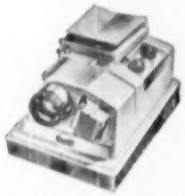

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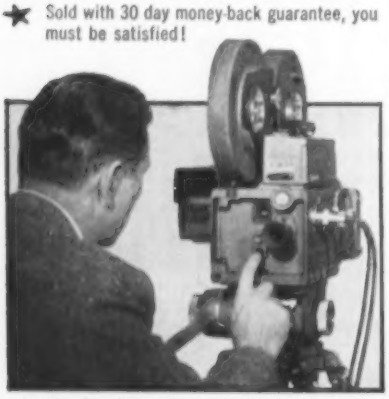

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case, trained or untrained, professional or amateur. They and their families and their children and their friends and the children of their friends will be the subjects. If no one helps them make good films, they will make bad ones.

There is nothing miraculous about the technical side of film productions that can't be learned in a relatively short time.

We refuse, however, to give the students purely technical training. We insist that they understand the social and the political implications of the documentary film, that they understand not only the "how" but the "why." They learn that the documentary film is an instrument of great social importance, that it must be used for better living and the better understanding of problems of our society, that it is a fighting weapon.

The program of the Institute developed out of consideration for the needs of non-professionals as well as the professionals. Thus all new students, who know nothing about film, go through the *Fundamentals of Film Production*, a lecture course in which the social importance of the documentary film, as well as its technique, is explained. They go on field trips to a laboratory, a cutting room, a recording studio. In this class they get acquainted with every step of production, from the planning of the film to its recording.

This is as far as we go with lectures. From there the students go directly into practical work, with eleven specialized courses and two experimental workshops.

The workshop students produce a short picture themselves, or a sequence of a picture, which they write, shoot, act in, edit, and record. They are allowed to make every possible mistake and they learn through errors, but *we insist that they finish whatever they start.*

Many of our students have gone on to professional success. Shortly after leaving the Institute, two students—Karl Hinkel and Albert Wasserman—won a 1947 Academy Award as producer and writer of the documentary film, "First Steps."

This is possible because of the complete schedule of courses available. We offer courses in photography, lighting, directing, film and sound editing, animation, script writing, and production.

At present we are planning to extend the scope of the Institute even further with the addition of a Master's program leading to the M.A. in film making.

To stimulate new thinking in the documentary film, we established six years ago the City College Film Award "for creative achievement in the Documentary film." Renamed in honor of the pioneer film producer, Robert J. Flaherty, at his death, The City College-Flaherty Award has attracted films from all over the world, from government agencies or big corporations which produced well-subsidized films like *Mount Everest*, *The Titan*, *Three-Two-One-Zero* or to individuals working on a small budget like *The Quiet One*, *Guernica*, *All My Babies*.—▶

See next month's POPULAR PHOTOGRAPHY *for the first article in the CCNY motion-picture short course series.*—ED

Do-It-Yourself Darkroom

(*Continued from page* 60)

lators to pump out the bad air. After this was done, the place still did not smell as I wanted it to. At the market I bought some Airwick and open it every time I work. This helps a great deal. The final move against unpleasant odors—I'll let you in on this secret—was when a friend of mine who is a perfume manufacturer gave me a piece of hose from one of his mixing machines. I connected it to the print washer and that ended my problem completely.

The heating of the room was no problem. I connected an electric heater to a switch located in a room upstairs so I can preheat the room in cold weather. For very cold days, I have a second small electric heater near the paper-developing tray.

All the materials I used did not cost a great fortune. I used scrap lumber whenever possible, and bought second-hand equipment like the sink. I paid $1 for it. You can do much work at a minimum of cost if you think out your problems and look around you just a little harder for the most reasonably priced material.

Is it really worth being as fussy as I was in building a darkroom? I think I can answer this question with a very definite yes. If you use a darkroom a lot; if you want to do good work (and there's always room for improvement); and if you have had the deep, sometimes secret desire to utilize many of the building and photographic ideas from publications, you are in a position to answer this question for yourself, easily. Whether you are a professional, as I am, or an amateur, you should *like* to be in your darkroom. Make it dry and make it safe and make it sound, but also, make it as pleasant as possible. For, when every thing is said and done, darkroom work has a way of getting tedious, and if your darkroom setup works against you, your problems are suddenly multiplied. The right darkroom can make photography fun.

Now, let us go down and make a print, and run a roll of film through the developer, hypo, water, and drying rack.

On the outside door which leads to my darkroom I have a sign that reads, "Darkroom. Knock Before Entering." If I should ever forget to lock the door, this sign may mean the difference between ruining and saving the work that is under way. One can never tell when a neighbor or friend who is not fully aware of what stray light means to the photographer might come wandering in.

Let's go over to the enlarging table and see how things are set up. As I make my comments, I suggest that you refer from time to time to pages 56-57 where illustrations appear. This checking will help you get a clearer idea of some of my innovations.

I have two enlargers—one, primarily for 35-mm work; the second, for larger (120 to 4x5) negative work. I have footswitches on both my enlargers. There is

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a plug-in strip running along the top of the wall behind the enlargers that allows me to connect and detach male enlarger plugs easily.

At the left of the enlargers, within easy reach, is a long strip of Pegboard attached to the wall. On the top shelf brackets I have two boxes, one for negatives which are to be printed, and the other for finished negatives. Having these containers is much better than having to scatter negatives all over the enlarging table and easel searching for a particular one.

Just below these negative boxes are shelves for three condensers which fit my large-negative enlarger. There is a square top that I place over each of the condensers that keeps dust off, yet leaves the equipment ready for quick use.

For paper storage, I have four large drawers in the cabinet to the right of the enlargers. The paper I have chosen to work with during a printing session is placed in the top drawer. I can get at it without bending or moving unnecessarily.

Up behind the cabinet is another wall of Pegboard. On it I have various lenses (each with its own cover) for my enlargers and several negative carriers of different size.

On the cabinet I have a contact printer. It is always plugged in and ready for use. I have made it a point to contact-print all my negatives as soon as they are dry. This is the only real way to see what you have. From these contacts you can tell how to enlarge and crop.

Along the side wall that runs from the enlarging table to the sink I have another long strip of Pegboard. On it are a timer, Varigam printing filters, scissors, a blower-brush for keeping negatives clean, Airwick which keeps my room fresh, two cups which hold various pencils, tongs, and a towel rack from which hangs an electrical heating rod. On very cold days when I must bring up the temperature of solutions, I plug in this heating rod and immerse it in the liquid.

I keep my printing solutions and trays in the large metal sink which is in the center of the room. My developer tray is raised so that I don't have to bend over to work in it. I have two deep hypo trays. Each of my prints goes through both trays to guarantee complete fixing, and after fixing, they are placed in a tray of hypo-neutralizer. Next, all prints go into my roto-washer. I have a timer cut-off switch which automatically shuts off the water after a predetermined period of time. It is hooked into the water line which runs to the washer.

Out of the basic plumbing I have hose outlets from which I can pipe water where I want it through flexible lengths of garden hose. Connections are quite easy to make, and can be purchased at any hardware or garden supply store.

Each of the washed prints goes through my wringer to get rid of excess water. I picked up this wringer in a second-hand store. It works efficiently.

I have a timing device hooked into my dryer. It automatically shuts off my dryer after a certain period of time. Both timers —on washer and dryer—leave me free to concentrate on other things.

There is another wall of Pegboard that runs past the dryer. Except for the far right corner, where I have a holder that carries instructions for all the equipment in the room, this Pegboard is unused. However, as I get new equipment and ideas, this space will become very valuable. It is "growing space."

As for towels, I have several-cloth towels in different places around the room. One is near the developer, another near the hypo, and the third near the door of the room. After each printing step, I wipe my hands on a different towel.

Deep shelves hold my chemicals—both mixed and packaged types. I try to keep all bottles clean and in their places.

The film room is the smaller of the two rooms. Because less equipment is required in developing negatives, I also use the room as an office. Vinyl linoleum covers all the cabinets and most of the walls.

Starting at the left of the room, I have desk-like setup. A phone is on this cabinet, and I have a catch-all office basket. On the wall behind are strips of Pegboard. One shelf on it holds a small negative file. Below is a shelf on which I keep fresh film. Pinned to the wall are data sheets on the types of film I use.

I have a second, larger timer in this room on the shelf. Below this shelf is a long plug-in strip. I can plug an electric heater, the timer, and what have you into this strip.

The shelf also holds a scale, weights, more Airwick, a jar with pencils, cotton balls, cotton swabs, and cleaning brushes. Another sheet of Pegboard runs over the shelf. It has circular hat holders hooked into it which serve excellently to hold funnels and beakers. Another Pegboard rack holds my mixing spoons.

The sink in the film room is a second-hand one I purchased for a dollar. I coated it with Neoprene. In one half of it I develop, in the other half I wash my films.

At the right of the sink, I have two deep hypo trays on a shelf. Hinged to the wall are a pair of covers which come down flush over the trays when the hypo is not in use. All my films go through both hypo trays.

Film that has been thoroughly fixed and washed is brought out of the film room and hung on shelf brackets, which are hooked into the Pegboard. There it dries.

I hope I have given you some ideas that might serve you. The next time you go down to your darkroom, list all the things that bother you about it. Then, take a trip to your local hardware store and look around. In minutes, you may discover that for a few cents and a minimum of effort you can make your darkroom better and pleasanter to work in.

The following products were used in building Miss Von Miklos' darkroom: Portland cement; Siliproof waterproofing paint by the Preco Chemical Corp.; Neoprene rubber coating; U. S. Plywood Corporation's waterproof plywood; Standard-Toch Rubber-Base Enamel; Seal Rite filling putty by Cauklin Co.; Angier Corporation's aluminum foil; Pegboard made by the Masonite Corp.; a dehumidifier by Sears Roebuck and Co.; electrical plug-in strips by National Electrical Products Co.; darkroom ventilator by Willoughbys; and Airwick.—▶

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Color Prints from Your Transparencies (*Continued from page* 70)

underexposure—usually have better highlight detail, which reduces the danger of these areas washing out in the print.

How to shoot

If you are going out to shoot with ultimate print-making in mind a few pointers will help you get transparencies that will be ideal for printing. Avoid shooting scenes that have deep shadows and strong highlights. High contrast can not be reproduced satisfactorily in a color print. Whenever possible, keep the sun at your back, thus insuring that your subjects will be evenly lighted.

Shooting at or around midday should be avoided. If you're taking portraits outdoors, for instance, the overhead sun will make deep shadows in the eye sockets. In a print, these shadows will come out very dark, almost black in some cases. Shoot outdoor portraits later or earlier in the day when the sun is lower.

If you can't avoid deep shadows, lighten them with reflectors or fill-in flash (a complete discussion of the latter is contained in the article *Fill-in Flash for Color* in the July, 1955 issue of POPULAR PHOTOGRAPHY). Snow, beach sand, or nearby light-colored structures such as walls can serve as natural reflectors to help eliminate shadows.

As I mentioned above, though your colors may be rich and bright, they should be illuminated at about the same intensity. For instance, a blond model might wear light, pastel-colored clothing; a dark-haired and/or dark-skinned model should, on the other hand, wear dark-toned clothing.

Because of the inherently lower contrast of light on hazy or cloudy days, pictures made under these conditions will often print better than those taken in brilliant sunshine. (Don't forget to use a U.V. or Skylight filter on cloudy days! You'll avoid results like the bluish color cast in the illustration on page 71.)

When shooting indoors, keep your lighting ratios low. A 1:4 ratio of fill-in light to mainlight is about maximum. Lighting contrast can also be kept low by using bounce flood or flash techniques. Diffusers in front of lamps help too.

Original vs. reproduction

Not long after receiving your first set of prints from the finishing lab (or out of the darkroom tray if you're a member of the ambitious group who make their own, with Ansco Printon materials), this question probably occurred to you: "Why don't my color prints have a tone range and brilliance identical with the transparencies from which they were made? The answer can be found to a large extent in the difference in which light affects prints and transparencies. When light strikes the surface of a print, it then passes through three or more gelatin and dye layers to the white cellulose base. It is then reflected back again through the same layers. Each time the light hits a layer, there is absorption, scatter, and diffusion, causing some degradation of color and dulling tonal separation. The surface of the print reflects and thus scatters some light, too. Much of this scattered light reaches the darker areas of the print, robbing them of proper depth. Since the film base can't reflect all the light incident on it (90 percent would be a lot, without emulsion layers) and since surface reflections reduce the depth of the dark areas, the over-all effect is one of graying or shortening of the tonal scale. Reflections from nearby colored objects, such as walls, also influence the appearance of the print.

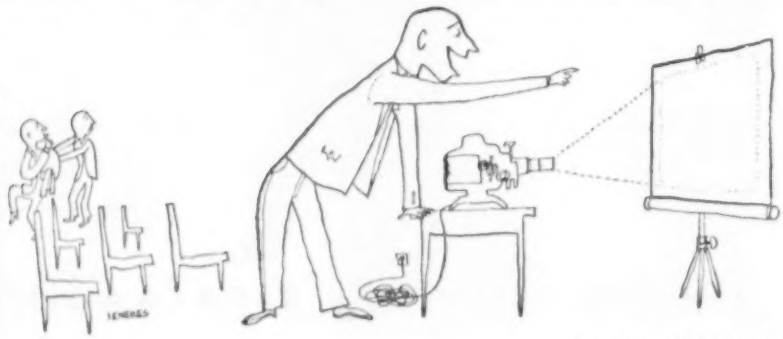
On the other hand, light passes through a transparency only once. There is no problem of light absorption from a white base, nor of light scatter from the transparency surface. Thus, in a transparency, a clear area could pass almost all light, while a dark area could absorb all light, giving it much greater tone-range possibilities than a print possesses.

Another reason for the difference between original and reproduction is that the dyes and contrast in the transparency can seldom exactly be duplicated in the dyes, color sensitivity, and contrast characteristics of the various layers in the print material. This is not hard to understand in view of the multiplicity of color-film types and processing labs, each with somewhat different procedures.

If you need an exact duplication for some special reason, you can resort to masking (discussed later in this text). Generally speaking, most color prints made by ordinary finishing methods are a close enough match to be pleasing. After all, you really can't expect to get a da Vinci or Picasso for 35¢ or even $5.

Overexposed transparencies

Prints from transparencies that are overexposed, like the example on page 71,



usually come out flat and uninteresting looking, especially in the light-toned areas. In portraits, where flesh tones represent an important light-colored area, this will be particularly disturbing. If, when sending your slides out for prints, you ask your finisher to attempt to correct this condition, the print will usually come out with muddy light areas and blocked-up shadows.

Most incorrectly exposed transparencies exhibit definite color shifts in one direction or another from normal. In an overexposed slide, this color shift may be too slight to notice. However, the color distortion may be accentuated in the print. The color shift from normal in badly overexposed transparencies can often be detected simply by placing the slide on white paper and examining by strong reflected light.

Underexposed transparencies

Underexposed transparencies, such as the example shown on page 71, lack detail in important shadow areas and are also usually rather dense. Prints from such transparencies will usually be dull and lifeless. Shadows will be dark, lack detail, and will often be rendered off-color. No amount of manipulation in the printing process can place details in areas where there are none. If extra exposure is given in printing to make up for the excess of density in the transparency, the resulting prints will be flat with weak shadow areas.

Contrasty transparencies

When a very contrasty transparency (probably the most difficult to print of all poor transparencies) is printed so that highlight detail is preserved, the shadow areas will usually go very dark, with attendant loss of detail (see page 71). On the other hand, exposing for the shadow detail will wash out any highlights. Proper exposure for middle tones means loss of detail in both highlight and shadow areas. In black-and-white photography, changing the contrast of the paper or manipulation in development can remedy such a situation. Color print materials, however, are available in only one contrast grade. Attempts to change contrast to any degree by development manipulation only lead to serious color distortions.

Off-color transparencies

A definite color cast in a transparency will generally be accentuated or even exaggerated in the printed version (see the bluish-tinted example on page 71). There are a number of avoidable situations that will add a particular, unwanted color to your picture.

A bluish cast will usually result in subjects shot from a great distance, aerial photographs for instance, and marinescapes. A Skylight or U.V. filter will eliminate the blue-producing ultraviolet rays that are multiplied in pictures like these.

Taking pictures in daylight with artificial-light film will produce a bluish appearance. A conversion filter is the answer here. Conversely, when shooting on daylight-type film, a red cast will be present in your slides. You'll also get a red

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cast when shooting by the light from a sunrise or sunset. The use of the proper filter sometimes reduces this coloring.

Using expired film or film that has been stored near heat (for instance, steam pipes or in the glove compartment or trunk of a car in the summer) sometimes will produce a greenish cast.

Shooting indoors or out, be aware of any nearby large colored surfaces (brick walls, trees, etc.) that will impart some of their color to your pictures.

Slight color casts can usually be corrected with one or more filters by your photofinisher. Sometimes correction can be achieved by sandwiching colored gelatin filters into a glass-mounted slide before sending it to be printed. This practice isn't particularly successful, excepting in viewing or projection, because the dyes in the filters don't always match the color sensitivity and the dyes in the printing material. In some cases, a visually correct, but spectroscopically incorrect, filter placed over your slide can even add a color cast of its own.

A better plan is to submit to your finisher two similar slides of the same subject, if possible; one with the visually-correct filter attached to it. The finisher is then able to make a print from the other slide, using the filtered one as a guide to the desired color quality. If you don't have two similar slides, include the visually correct filter as a guide to the desired results.

Monochromatic transparencies

This is a slide characterized by a short, delicate, and frequently effective, scale of tones, viewable and projectable, but generally unsatisfactory as a producer of prints because surface reflections and internal light scatter will usually reduce the tonal scale to such a great degree. In addition, if the dyes and sensitivity in the print material don't match those in the original, even the slightest color shift caused by this procedure will be very disturbing.

Preparation of slides for printing

Condition: Transparencies intended for printing should, first of all, be free from fingerprints, dirt, and scratches. To remove fingerprints and other grease marks, wipe them gently with a soft cloth or absorbent cotton soaked with a few drops of such preparations as Kodak or Edwal Film Cleaner or carbon tetrachloride. (Use the latter in a well-ventilated room!) Don't let any drops form and dry on the film.

Surface particles are easily removed with a soft brush of the type used to clean camera lenses. Special brushes like the Alpha Ray or Static Master contain a strip of radioactive polonium and neutralize any static electricity, which otherwise attracts dust particles formed on the surface.

Surface scratches can be partially or entirely eliminated by cleaning and then varnishing them with a preparation such as Cinelac or Kodak Film Lacquer. Be sure to remove slides from their cardboard mounts before varnishing. Deep scratches or digs can only be repaired by skillful retouching. If a scratched slide is particularly valuable, I recommend that you let an expert salvage it for you.

Form: For maximum sharpness, don't send glass-mounted slides to your printmaker if you don't have to. They are usually easily dismounted and can be submitted in protective acetate sleeves. It's perfectly all right to send them out already mounted in cardboard mounts.

If you *must* send glass-mounted slides out for a special reason, make sure your finisher's machine will take them and be sure to stipulate that you don't want them unmounted. Be sure, too, that the slide glass is scrupulously clean.

Enlargements: If you want enlargements of your color shots, they should be examined critically with a magnifier for sharpness. A good rule to follow, based on my experience, is to use a magnifier at least equal in power to the number of diameters you're going to enlarge. Thus a 35-mm (1x1½ inches) transparency that is going to be enlarged to 5x7 inches (5 diameters) should be viewed with a 5x magnifier. (To find the number of diameters your transparency is being enlarged, divide the short dimension of an oblong transparency into the short dimension of the resulting print. If a square transparency is being enlarged into one of oblong shape, divide the transparency dimension into the longer dimension of the finished print.)

Cropping: This is best done by attaching an opaque-paper frame, called a mask, indicating, by the size and shape of its opening, just what and how much subject matter you want included in your print. You can cut your own openings on ruled Kodak Mask Charts or buy ready-made masks. Gemounts, 5817 Sheridan Ave., Detroit, Mich., makes over 25 different sizes. For other mask makers, consult the 1955 PHOTOGRAPHY DIRECTORY. Masking with black adhesive tape isn't recommended because it may melt and adhere to your slide or become hardened into place after a long period.

Masking: This is sometimes resorted to in order to adjust the color balance and contrast of a color slide so that it will print properly. A mask is a weak negative made by contact printing from a transparency which is then bound in register with this transparency to make the print. There are two types of masks, highlight and color correction. The highlight mask attempts to lower the over-all contrast of the transparency by adding density to highlight areas. Shadow areas may thus print properly without undue loss of highlight detail. A color-correction mask is made by exposing special panchromatic film in contact with the transparency, using appropriate filters, depending on what color or colors are to be corrected for. Both types may be employed at the same time, if both color and contrast correction are desired simultaneously. Certain color labs offer a masking service at additional cost. For instructions on how to mask transparencies yourself, read the Kodak Data Book, *Color Separation and Masking*, available at photo dealers for 50¢. Ansco, Du Pont, and Gevaert also offer information on the use of their masking materials. Addresses are in the 1955 PHOTOGRAPHY DIRECTORY.

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35mm f2.5	75.00	85mm f1.5	189.00	400mm f5	199.00
35mm f3.5	68.00	90mm f2.5	55.00	400mm f5.6	189.00
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Types of color prints

Kodacolor: While the emphasis of this discussion has been placed on the choice of color transparencies for printing, many of the criteria apply also to the selection of negatives which Kodacolor (developed and printed only by the manufacturer) give. In negatives also, excessive contrast, under-, and overexposure will produce poor prints. It is difficult, however, for the average person to "read" a color negative well enough to be able to predict the appearance of its print. This is no problem, though, because when a roll of Kodacolor is submitted for developing and printing, Kodak lab technicians choose only those negatives that, in their opinion, will make pleasing prints. Poor negatives are left unprinted and returned with the good negatives and prints.

Occasionally, a poor negative bearing important subject matter is left unprinted. You may resubmit it and Kodak will make a print at additional cost. In instances where you want prints regardless of negative quality, mark your envelope "Print regardless." If you don't want to pay for poor color prints, black-and-white ones can be made by a regular finisher.

(Ed. note: In the near future, the processing materials for Kodacolor will be released to local finishers. Negative choice and printing policy will then, of course, be determined by each finisher. The name Kodacolor will probably not be applied to these prints.)

Cropped prints can also be ordered from Kodacolor negatives (for a 20¢ additional service charge by Kodak for the first print). Attach a mask whose opening frames the area you want printed. Never cut a Kodacolor negative down to size for this will remove the identifying notches and marks on the film edge that tell the printer which correction filter to use.

Miniature transparencies: Eastman Kodak will produce a 2¼x3¼ color negative (similar to Kodacolor) from 35-mm and 828 color slides. This is then used to produce Kodacolor prints, in sizes up to 5x7 and 8x10. The chief advantage of this process is the lower cost of Kodacolor prints. This can amount to quite a saving when quantities of prints are ordered (you may want to attach color prints to your Christmas cards, for instance).

Printon and Kodachrome: The majority of color prints from amateur transparencies are made on these two types of materials. (Printon is manufactured by Ansco; Kodachrome, by Eastman Kodak Co.) The basic structure of both is the same: coated with emulsion similar to those used on transparency color films, with a white cellulose base because of its greater reflective power. The chief difference is in the processing. Printon can be processed easily with little more than ordinary black-and-white processing equipment, which means there's a do-it-yourself-kit of Printon materials available for use in your darkroom. (The Ansco booklet, *Color Photography Made Easy*, is sold at your photo dealer's for 50c.)

The processing of the material for Kodachrome prints is much more complex and exacting and at present, only Eastman Kodak is equipped to do so properly. Both materials are capable of excellent color prints. Which will please you best is mostly a matter of personal taste.

Dye Transfer and Carbro: If you are interested in getting a color print of high quality and color fidelity from one of your prize transparencies and are willing to pay a relatively high price, investigate these two printing processes. They both involve the making of three "separation negatives" from the transparency—one for each primary color. In the Dye Transfer process, three matrices are made from the separation negatives, which are then dyed and the dyes from each transferred in register over each other onto a single sheet of paper. During the making of the separation negatives and matrices, many corrections for color and contrast can be made, making for prints of superb quality.

In the Carbro process, three pigmented gelatin reliefs are made from the separation negatives and mounted over each other in register on a single sheet. Because pigments rather than dyes are used here, greater color fastness is claimed.

The first Dye Transfer print is usually rather costly. However, once the matrix is made, additional prints are lower in cost. With a good darkroom and skillful technique, you can make either type print yourself. Eastman Kodak publishes a data book, *Kodak Dye Transfer Process;* instructions on making Carbro prints are available from George Murphy, 57 E. 9th St., New York 3, or Curtis Laboratories, Inc., 2718 Griffith Park Blvd., Los Angeles 27, Calif.

Displaying prints

The manner in which you display your color work is just as important as the efforts you go through in selecting and preparing the transparencies. Although the use of white or light-colored frames is currently popular, it isn't desirable for color prints. The light mounts tend to darken and dull color prints because the mount is so much brighter than the brightest highlight in the print. A light mount might also throw light into the shadows of the picture, resulting in a shortening of the tonal scale. A little experimentation will prove to you that a dark or black frame will effect an over-all appearance of brilliance, especially in the highlights. You may possibly be striving for a particular effect and then, of course, you may want to use another, lighter color deliberately.

Mounting prints under glass will protect them against dirt and fingermarks.

Prints made on a white cellulose base can't be affixed to a mount with ordinary paper adhesives such as rubber cement and paste and ordinary dry-mounting tissue. Fixatives such as Kodak Rapid Mounting or Duco cement will hold this type of base fast to a cardboard mount. Dry mounting can be done by using Kodak Thermount tissue or the brand manufactured by Seal, Inc., Shelton, Conn. Paper prints are best mounted this way. Be careful to use no more heat than is necessary.

To get the longest wear out of your prints, avoid long periods of exposure to daylight, moisture, extreme heat, and chemical vapors.—

Motion

(*Continued from page* 62)

only one area of a moving object in sharp focus, while the rest is a vague blur. The other factor was the time lag between the start of a movement and its finish. Strate wanted his viewers to feel this time element, to recreate in their own minds the way the original movement looked. So the problem was: how to make a photograph which shows motion the way we actually see it?

Strate first of all wanted his studio setup to give the dancers as much room to dance as possible, and wanted to keep his equipment simple enough to let him move around them easily. Accordingly he hung a 28-ft-wide roll of white seamless paper from the ceiling of his studio, letting the paper spread out on the floor. On rails attached to the ceiling he hung rows of 150-watt reflector-type lamps, with additional reflector lamps on the floor directed at the roll of seamless paper. This arrangement (see page 63 for diagram) was so brilliantly lighted he had a great deal of leeway in his exposures—and also provided sufficient freedom for the dancers, who were accompanied on a phonograph with their own favorite music. Strate decided on a Rolleiflex to give him the shooting ease he needed plus a fairly large negative.

After lengthy experiments, Strate found he could use three different methods for getting the results he wanted:

1) He used a shutter speed slightly *slower* than would be required to "freeze" the entire action. If a dancer whirled so fast that only a speed of 1/1000 second would stop the movement, Strate would shoot at 1/500. This produced a negative sharp in some areas and blurred in others—since actually all parts of a dancer's body do not move at the same rate of speed.

2) The choice of low- and high-angle camera positions helped to create distortion of the subject. Strate felt this increased the feeling of motion, because the arms or legs or drapery would appear larger or smaller than normal and assume more or less importance according to their speed and position.

3) Controlled movement of the easel during enlarging enabled Strate to produce further distortion of any area of the picture he wanted, and also to induce a soft focus in places where he wanted to add to the feeling of blur.

His shooting technique might be called strenuous. He watches the dancer intently while she goes through her routine until he sees a movement that pleases him—then he has her repeat it thirty or forty times while he shoots it from all angles as fast as the Rollei will let him.

With the successful development of this still-camera technique, he has now turned to directing motion pictures. Two of his short films—*Lament* and *The Moor's Pavanne*, both starring Jose Limon—have won prizes at the Venice and Edinburgh film festivals. His first feature-length picture is being made now, a documentary thriller about New York's Greenwich Village.—

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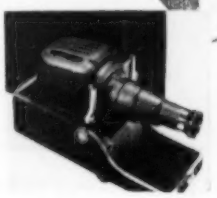

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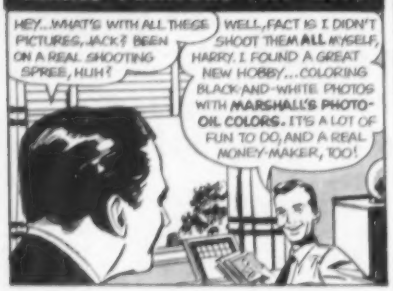

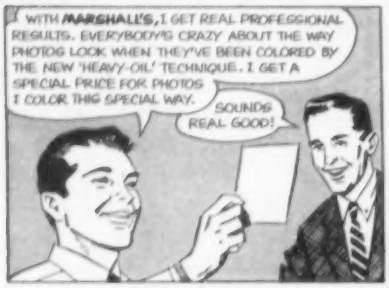

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35-mm today

By Bob Schwalberg

Random thoughts on processing your summer negatives

Now that fall has fallen, the warm glow of amber safelights brightens the gloom, and the darkroom season has arrived once more. It is a season of anticipation in which the bright images of summer are transformed into the realities of negatives and prints. It is a time of rewards and of regrets, of triumphs discovered and of blunders revealed.

Those who were sufficiently foresighted to have scribbled a few words on the film leader, or to have enclosed a brief note in the film can along with the cassette, will be better prepared to develop their summer films.

"Kids-beach probably over," should evoke total technical recall and be translated into: "use a soft-working developer and cut the time." "Night-campfire push" becomes a signal for an available-light technique. The man who can no longer remember which roll is the fishing expedition and which the flash shots at the country-club dance, had best rely on inspection development or trust to blind chance.

Subjects photographed in harsh sunlight need soft-working development. For this picture Plus-X was developed 10 minutes in Clayton P-60. The camera was a Leica with 90-mm Elmar lens and the fast action was stopped with an exposure of 1/500 and f/8.

Inspection development is a valuable skill to acquire because it permits us accurately to adjust our development in accordance with the exposure given. Over- and underexposed films that would suffer from strict adherence to time-and-temperature processing can usually be rescued by inspection.

To inspect during development you need a heavy-green safelight such as the Wratten No. 3, and a developing reel which permits respooling wet film after inspection. Reels which load from the center of the core outward such as the Nikor and Patterson are ideal for inspection, as are apron-type tanks like the Corfex and Kodacraft. Some years ago we asserted somewhat dogmatically that plastic push-in type reels could not be respooled when wet. Not so, wrote in several readers—hold film and reel under water and they work fine.

The technique of inspecting is initially difficult to master, but once mastered you will wonder how you ever got along without it. Here are a few ideas that should help:

Hang the green safelight so that it shines straight downward, and do not look directly into the light. Stay in the dark with only the safelight for at least five minutes prior to inspecting. Hold the film emulsion side up and look directly at the developing image. The danger of safelight fog does exist, so avoid inspecting too soon, or for too long a period of time. As development proceeds the films become less and less sensitive to the green light, so wait until at least 50 percent of your normal immersion time has elapsed before you take your first look.

Above all, however, do not become one of those "inspecting fools" who believe that inspection is the complete answer to sloppy technique and that accurate exposure is a quaint, old-fashioned idea. Compensation for errors in exposure will never duplicate the optimum quality obtained from accurately exposed and normally developed negatives. Cutting the time for overexposed negatives results in lowering of over-all negative contrast. Increasing the time for underexposed negatives exaggerates negative contrast and results in harshness.

The principle to bear always in mind is that *exposure does relatively more for the shadows than it does for the highlights, while development does relatively more for the highlights than it does for the shadows.* The more you expose, therefore, the closer does the shadow density approach the highlight density, and the lower the negative contrast. Additional development, on the other hand, builds highlight density at a faster rate than it builds shadow density, and negative contrast is increased.

The question frequently is asked as to the usefulness of inspecting 35-mm in the light of 36 exposures per full load. The answer is, of course, that if there is no relation between any of the exposures on the roll, there is no advantage to inspecting. But, for that matter, inspection will at least allow you to decide which negatives to save and which to sacrifice.

To obtain the full benefit from inspection it is important to expose your film uniformly. This means no more than keeping your meter set at the same ASA speed index and using it properly. With most soft-working, low-to-medium-contrast developers, adherence to the same speed index will accommodate most normally encountered lighting conditions to the same immersion time. With other film-and-developer combinations it will be necessary to increase or decrease exposure under certain circumstances in order to control negative contrast. A typical example of this is the use of an available-light combination indoors in

dim incandescent lighting and then out-of-doors in bright sunlight.

Valuable vacation negatives should be processed in a developer with which you are thoroughly familiar, no matter what you may have read about the superiority of some new preparation. Don't play guinea pig with important negatives. Stick to the tried-and-true formulas until you've had a chance to give the newcomer an adequate test.

For most out-of-doors summer negatives made on medium-speed films like Plus-X and Supreme, you'll want a soft-working moderately active developer giving somewhat less contrast than D-76. Among the formulas we prefer are Clayton P-60, FR X-33B, Edwal Minicol, Kodak D-23, and Microdol. These developers, and their many cousins, are kind to brightly lighted highlight areas and give negatives of very fine grain.

Bottles of developer which have acquired a summer tan on the darkroom shelf had best be discarded. Unused developers and replenishers which show no discoloration are probably O.K.

Hypo stock solutions normally last for very long periods of time, but working-strength solutions very soon lose their effectiveness. Starting the new season off with fresh solutions wherever you have the slightest doubt of a developer or a fixer's potency is good insurance against unnecessary disappointment. The few pennies saved by using over-age formulas are not worth the great risks involved.

Developing a large quantity of film shot over the summer months affords an excellent opportunity to examine errors and to learn from them. Try to discover any consistent mistakes in exposing, focusing, and framing. The man who, by the grace of God and the latitude of his film, has a perfect set of negatives, may not learn as much as the man who has muffed, but knows how and why.—

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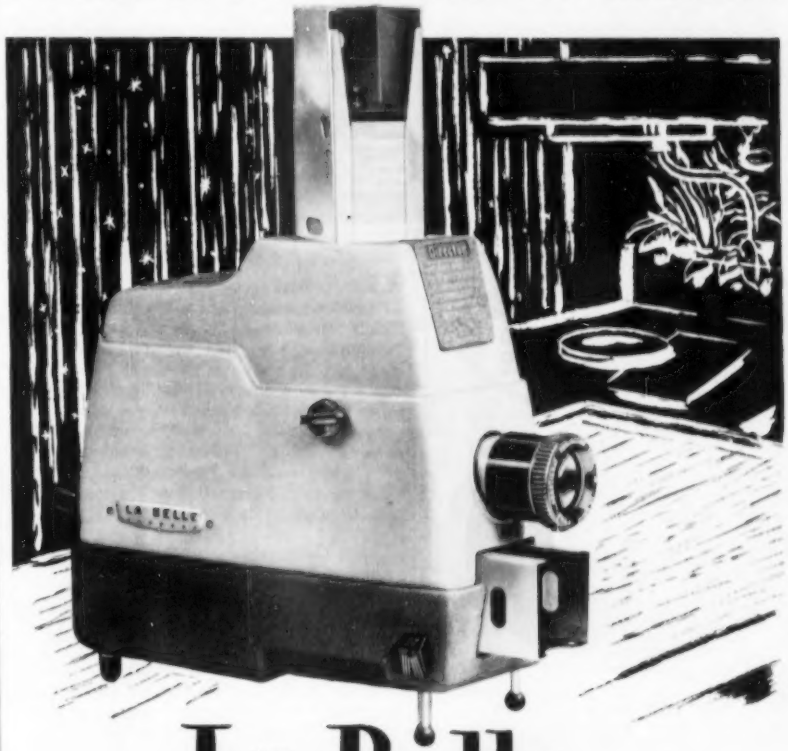

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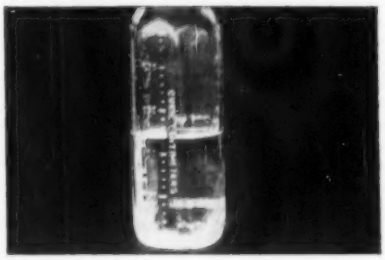
Storing Small Parts

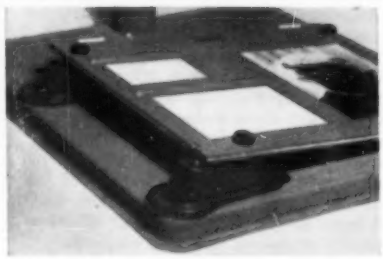
Small items in the darkroom—machine screws, miniature tubes for timers, sections of cable releases, and similar parts—easily are misplaced or lost if not kept in containers. Empty 35-mm film cases are ideal for storing these small parts. The cases, measuring about 2 inches high and 1⅛ inches in diameter, require very little space. Contents of each can be identified by label or by inscribing the information directly on the case.—*H. Leeper, Canton, Ohio.*

Baby's Bottle in Darkroom



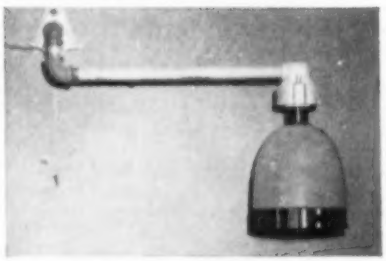
A baby's feeding bottle which is marked in both ounces and cubic centimeters is a handy item to keep in the darkroom. Most of us have had the experience of discovering, after we've started to mix certain darkroom solutions, that the formula required a measurement of cubic centimeters, and we had no conversion data available. In such instances, a baby's bottle of the aforementioned type fills the need adequately for measuring. —*C. Lecakes, New York, N. Y.*

To Tilt Enlarging Easel



Rubber doorstops, of the type shown in the accompanying photograph, will serve excellently as easel blocks when you are correcting distortion by tilting the enlarging easel. Because of the wedge shape of these doorstops, the task of adjusting your easel to the required degree of tilt can be accomplished quickly and easily. They hold firmly and solidly. Most dime stores and hardware counters carry these items, and they are very inexpensive.—*M. Chafin, Longview, Washington.*

Swinging Safelight



A convenience for the darkroom is a safelight so mounted on the wall that it can be swung from tray to tray as required, or pushed against wall when not in use. Two pipe elbows and two short nipples were used to modify a yardlight fixture for the safelight arrangement pictured here. Pipe length can be varied for individual darkroom. Fittings should be screwed tightly enough to hold weight of light, while allowing it to swing easily. —*L. Folkers, Boise City, Okla.*

For Film Protection and Storage

If you prefer not to cut your roll-film negatives apart, they can be left in the full strip for convenient storage and ready reference by rolling a strip of adding machine paper of the correct width along with the film (as shown in the accompanying illustration) to prevent scratching. The white paper makes it easy to identify each frame as it is unrolled, and the outside of the paper can be used for jotting down technical and other data.—*G. C. Graham, Pine Bluff, Ark.*

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Calendar of exhibitions

* Conducted according to the recommended practices of the Photographic Society of America.

1st International Color Slide Salon of New York, The Photo Society of New York, New York City.
Closes September 15, 1955.
Entry fee $1, four slides allowed.
On exhibit at Mott Street School Auditorium, Chinatown, New York City, October 1 and 2, 1955.
For information and entry blanks, write 1st International Color Slide Salon of New York, 44 Mulberry St., New York City 13.

3rd Luxembourg International Color Slide Exhibition*, Camera-Luxembourg.
Closes September 19, 1955.
Entry fee $1, four slides allowed.
On exhibit at the Carrefour House, Luxembourg, October 11 and 18; at Dudelange, October 12; at Differdange, October 13; at Esch, October 14; at Wiltz, October 15; at Ettelbruck, October 16 and 23; and at Petange, October 20, 1955.
For information and entry blanks, write René Jentgen, Exhibit Chairman, rue Felix de Blochausen, Luxembourg, Grand Duchy.

4th Mexico International Salon of Photographic Art*, Club Fotografico de Mexico.
Closes September 22, 1955, black-and-white; October 1, 1955, color.
Entry fee $2, four prints; $1, four slides or four stereo.
On exhibit at Club Fotografico de Mexico, Mexico, D.F., October 20 through November 10, 1955.
For information and entry blanks, write Ing. Jose Lorenzo Zakany, Venustiano Carranza 69, Mexico, D.F.

3rd Annual International Exhibition of Colour Photography, Stockton-on-Tees Photo-Colour Society, Stockton-on-Tees, England.
Closes September 29, 1955.
Entry fee $1, four slides or prints allowed.
Exhibition opens at Holy Trinity Hall, Yarm Lane, Stockton-on-Tees, England, October 22, 1955.
For information and entry blanks, write James B. Milnes, Hon. Entries Secretary, 9 Ellen Avenue, Stockton-on-Tees, England.

8th Magic Empire Color Slide Exhibit*, Tulsa Camera Club, Tulsa, Okla.
Closes September 30, 1955.
Entry fee $1, four slides allowed.
On exhibit at Philbrook Art Center, Tulsa, Okla., October 17, 18, and 24, 1955; at Veterans Hospital, Muskogee, Okla., October 19, 1955.
For information and entry blanks, write Joe E. Kennedy, Exhibit Director, 1029 Kennedy Bldg., Tulsa 3, Okla.

The Bath International Photographic Exhibition*, The Admiralty Camera Club and The Bath Photographic Society, Bath, England.
Closes September 30, 1955 (entry forms), October 3, 1955 (entries).
Entry fee $1, four prints and/or twelve slides.
On exhibit at Victoria Art Gallery, Bath, England, October 13 through 29, 1955.
For information and entry blanks, write P. B. Lauder, Honorary Exhibition Secretary, 11a Entry Rise, Combe Down, Bath, England.

Pretoria Centenary International Salon of Photography, The Pretoria Photographic Society, and The Photographic Society of Southern Africa, Pretoria, South Africa.
Closes September 30, 1955.
Entry fee $1, four prints allowed.
On exhibit at City Hall, Pretoria, South Africa, November 5 through 12, 1955.
For information and entry blanks, write Oscar Abramovitz, Salon Secretary, P. O. Box 1065, Pretoria, South Africa.

Camera Club 6th International Colour Print Exhibition, London, England.
Closes October 1, 1955.
Entry fee $1, color prints only.
On exhibit at The Camera Club, 23 Manchester Square, London, W.1., England, October 30 through November 27, 1955.
For information and entry blanks, write E. C. Codd, Hon. Secretary, The Camera Club, 23 Manchester Square, London, W.1., England.

11th International Color Slide Exhibition, Chicago Color Camera Club, Chicago, Ill.
Closes Oct. 10, 1955.
Entry fee and number of prints on request.
On exhibit at Museum of Science and Industry Oct. 30 and Nov. 5 to 6, 1955.
For information and entry blanks write Frances Hutton McQuown, 8 South Michigan Ave., Chicago 3, Ill.

Photographers' Exhibit Society's 4th International Color-Slide Salon, Cleveland, Ohio.
Closes October 10, 1955.
Entry fee $1.25, four slides allowed.
On exhibit in Cleveland, October 31 through November 11, 1955.
For information and entry blanks, write Mary-Jane Matheson, 12317 McGowan Ave., Cleveland 11, Ohio.

Arizona Fair Exhibition of Photography*, Phoenix, Arizona.
Closes October 12, 1955.
Entry fee $1.50, four prints; $1, four slides.
On exhibit at Arizona State Fair Grounds, Phoenix, Arizona, November 4 through 13, 1955.
For information and entry blanks, write Arizona State Fair, Phoenix.

2nd International and 21st Annual Exhibition, The Photographic Society of Ceylon, Colombo, Ceylon.
Closes October 14, 1955.
No entry fee, four slides and/or prints allowed.
On exhibition at 113, Steuart Place, Colombo, Ceylon, November 12, 1955.
For information and entry blanks, write S. G. Nazzari, Esq., Ceylon Tobacco Co., Ltd., P. O. Box 18, Colombo.

International Festival of Photographic Art—Brussels 1955, Photo-Ciné-Club-Boitsfort, Brussels, Belgium.
Closes October 15, 1955.
Entry fee $1, four prints allowed.
On exhibition in Brussels, January 1, 1956.
For information and entry blanks, write R. Besard, 465, Avenue Reine Astrid, Crainheim, Belgium.

1st Biella International Monochrome Prints and Color Slide Exhibition*, Cineclub Biella, Biella, Italy.
Closes October 15, 1955.
Entry fee on request, four prints or four slides allowed.
On exhibit at Cineclub Biella, via della Vittoria 31, Biella, Italy, November 4 through 14, 1955.
For information and entry blanks, write Cineclub Biella at the above address.

15th Victoria International Salon of Photography and Color Exhibition*, Victoria Camera Club, Victoria, B. C., Canada.
Closes October 15, 1955.
Entry fee $1, four slides allowed; $1.50, four prints.
On exhibit at Arts Centre of Greater Victoria, November 13 through 20, 1955.
For information and entry blanks, write James A. McVie, Salon Director, 2171 Bartlett Avenue, Victoria, B. C., Canada.

3rd International Color Slide Exhibit*, Fine Arts Camera Club, Evansville, Indiana.
Closes October 17, 1955.
Entry fee $1, four slides allowed.
On exhibit at Evansville Public Museum, October 20, 1955; Washington Grade School Auditorium, November 10, 1955.
For information and entry blanks, write Fine Arts Camera Club, 6 S.E. 8th St., Evansville, Indiana.—

Aristo HI Grid Lamp

(*Continued from page 65*)

when used as enlarging light sources. These are (1) perfect evenness of illumination over the entire negative area with absolutely no "hot-spotting" in the center and (2) low heat output which prevents buckling or otherwise damaging negatives which are left in the enlarger for any great length of time. In a series of tests in which I was attempting to assess the efficiency of a number of enlarging lenses, I found that many lenses could, when stopped down to *f*/8, produce a brightness ratio of about 3:4 or 3:5 between the center and extreme corner illumination, when used with a straight condenser setup. When the same lenses were measured with the cold-light unit I discovered that the corner-to-center brilliance ratio became almost 1:1. In other words, with cold light the only vignetting which occurs is caused by the optics of the projection lens rather than the light source. (*It should be remembered that every camera lens ever made vignettes very slightly and the small amount of vignetting in the enlarger lens is actually beneficial because it cancels out the camera lens' vignetting.*)

The low operating temperatures of cold-light units result from their low power input (the HI unit consumes only 35 watts) and the fact that what heat is developed is dissipated over a large emission area. After several hours of intermittent operation the lamp-house of even a well-ventilated condenser enlarger becomes too hot to touch. After a similar period of *continuous* operation, an enlarger equipped with a cold-light unit is apt to be slightly warm, but that's all. This is important because hot negatives tend to buckle so that they are no longer flat in a glassless negative carrier, and, of course, unless they're flat they can't be enlarged sharply.

But aside from these normal cold-light characteristics, the Aristo HI unit possesses four significant advantages. These are:

(1) *Very fast printing speed in comparison to other cold-light units, as well as condenser light sources.* In comparison to several popular condenser enlargers equipped with 75-watt incandescent lamps and clear condensers the HI was found to be almost as fast as one, equally as fast as the second, and considerably faster than the third. The fastest of the condenser enlargers is the Omega series B, which uses a 75-watt lamp and a triple condenser setup, and even here the difference is really quite insignificant. Compared to other types of cold-light units, the HI is anywhere from two to three times as fast.

(2) *The contrast of the HI unit is as high as, or higher than, condenser light sources now in general use.* Straight competitive tests with very careful controls to eliminate variables indicate that of all enlargers tested only the Omega B series gives higher maximum contrast, and even here the difference is not very great.

(3) *Without minimizing over-all contrast, the HI unit gives a superior range*

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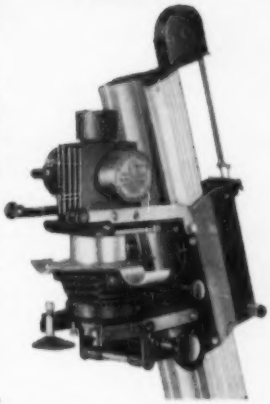

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of well-defined middle tones. The effect is almost as if the tonal range were stretched out between the darkest black and the whitest white in the print. When prints made with the condenser unit were given identical treatment in order to obtain equal blacks and whites they characteristically contain fewer tonal gradations between these extremes.

(4) *Maximum image resolution is only theoretically impaired by the HI unit.* Many readers may well have been surprised to find unlisted the complete suppression of negative dust, scratches, and grain in the discussion on normal advantages of cold-light units. Most standard cold-light units eliminate these defects, or at least minimize them, to a much greater extent than does the HI unit. Negatives enlarged with the HI unit do print less grainy than when printed with condensers. The difference is that the grain is finer, but it is still there. Cold-light and other diffusion lamp-houses which eliminate grain almost completely do so at the expense of good resolution. Sharply defined detail in the thinner portions of the negative appear muddy and unsharp in the final print. But with the HI unit, the resolution is very high, almost as good as with the best condenser enlargers. For this reason, scratches which disappear with normal low-contrast cold-light units still appear on HI-enlarged prints, although they do seem to blend in with surrounding negative areas to an appreciable extent. Dust spots, however, are almost entirely eliminated when the HI light source is employed. Despite the degree of dust, grain, and scratch suppression afforded by the HI unit, prints made with it appear visually as sharp as those made with condenser machines.

Working with any cold-light unit involves three problems. The first is difficulty in focusing the enlarger. In the case of the HI unit, its blue-green light emission is actually more effective photograpically than standard white incandescent lamps, which emit a lot of colors which do not affect photographic enlarging paper. These other colors (which add up to white light) are, however, highly visible to the human eye, and it has to be admitted that focusing the HI is more difficult than focusing a straight condenser machine with an incandescent lamp. To assist in focusing accurately (on the grain!) three ideas have been found helpful by the author during the past eight months, in which he used the HI unit. The first is to obtain a pale-yellow focusing paper instead of using the dead-white back of an old piece of printing paper. If you cannot locate pale-yellow paper of suitable thickness in your local art-supply store try painting the back of an old print with some showcard yellow which has been heavily diluted with water. This will serve to raise the apparent contrast of the negative image on the easel and increase speed and accuracy. A second help is afforded by an optical focusing magnifier such as the model currently manufactured by Bausch & Lomb and priced at $6.50. This gadget pin-points your enlarger focus in the center of the illuminated easel area with great ease and precision. But, by far, the most valuable aid in focusing any cold-light enlarger is to shut off your safelights while you're focusing. I became so enthusiastic about the HI unit that I rewired my safelights so that one switch situated near the enlarger easel throws all the safelights off with one motion. In total darkness the HI's mysterious blue-green negative image becomes much easier to focus. Incidentally, if you wear glasses to correct near-sightedness, you may credit my wife with a valuable assist. One day as I was struggling to focus a very dense negative she remarked, "Why don't you take off your glasses?" I did. It works splendidly—for me!

The second "problem" of living with cold light is that to operate efficiently and uniformly from exposure to exposure, the mercury in the tube must be vaporized completely. This means the first thing you do when starting an enlarging session is to turn the cold light on. Then arrange your trays, prepare your solutions, locate your negatives, and work up the proper inspiration. The only times the unit should be off are when inserting and removing sensitized paper before and after your printing exposures. As soon as the print is out of the easel, on goes the cold-light unit. In this way the gaseous content of the tube will glow correctly and your exposures will be uniform. The tube, incidentally, has an extremely long life. In normal usage, it is effective for about ten years.

When dodging or holding back with a cold-light-equipped enlarger you will frequently find that the shadows cast by the safelight overpower the shadows you're looking for and it becomes difficult to burn-in or dodge accurately. The solution, again, is to kill the safelights temporarily.

These facts of life with cold light are actually not as terrible as they probably sound to you. In the case of the HI unit they are well worth the small extra bother. You will find yourself turning out better prints with less effort after a short amount of practice.

The first thing you notice with the HI unit is its greater printing efficiency in the highlight areas which print at the same rate of speed as the less-exposed negative areas. In effect, this means that any unit of exposure time for the shadow areas includes an extra kick for the highlights. If the same negative is printed twice, first with cold light, then with condensers, you will find that even if you didn't have to burn-in a very dense area with the cold light you probably will have to do some burning with the condenser. But by far the greatest advantage inherent in the HI unit is its "stretching out" of the middle-tone areas which has the effect of pulling a print together. This means when printing for equal highlights and shadow densities with both light sources, the print enlarged by means of the HI light will very gradually decrease in density from highlight to shadow, while the condenser-enlarged print will tend to compress all the subtle values visible in the first print.

At the same time, the maximum shadow-area contrast possible by reduc-

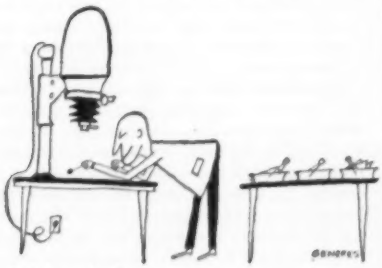
ing exposure with the HI unit is as high as that obtained in the tests with three standard condenser enlargers. (As indicated before, the triple condenser Omega B enlargers are capable of somewhat higher maximum contrast.) Thin negatives print as well and as easily as negatives of normal density.

One of the things that has always been a bother in printing 35-mm and 2¼x2¼ negatives with various incandescent-type lamp-houses was the inability ever to quite match the tonal quality of contact prints made on straight number-two enlarging paper. Why this is so is not fully understood, but I can report that with no increase either of effort or of skill on my part, enlargements made with the HI unit on Varigam and Kodabromide papers seem now to closely match the tonal gradations observable in contacts. And this applies generally to negatives which are high, low, or normally contrasty.

The blue-green composition of the Aristo HI lamp has been accurately tailored to meet the requirements of all photographic enlarging papers, including Varigam. Tests indicate that the high-numbered (contrasty) Varigam filters operate as well or as poorly with the HI as they do with condensers. However, when the low-numbered (soft-contrast) filters are used in conjunction with dense, contrasty negatives, the HI lamp greatly outperforms the condensers in point of quality as well as printing speed. Up to now, when it was stated that the printing speed of the HI lamp is equal to that of most condenser enlargers, the reference was to the over-all printing speed in highlights and shadows as observed over a long period of time with thousands of negatives. Actually, it is more specific to state that the HI lamp is slightly slower in the effect of a unit of exposure on a thin negative area, but slightly faster in relation to highlight areas.

The very favorable speed, contrast, and resolution characteristics of the HI enlarging lamp present a very valuable new tool for producing superior enlargements. The extra-long range of middle-tone values picked up by this light source is remarkable. The slight suppression of negative grain and other defects is accomplished without any appreciable loss in print sharpness.

HI units may be obtained for nearly all enlargers now on the market. The "23" High Intensity unit for all enlargers from 35-mm up to 2¼x3¼ is priced at $28.65. An accessory HI lamp for plugging into Aristo 4x5 and 5x7 cold-light heads is priced at $10.75. When the accessory tube is used in a large-sized head, negatives up to 2¼ 3¼ can be handled.—



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Alfred Eisenstaedt

(*Continued from page 92*)

Eisenstaedt sold his first picture when he was 30—an arty shot of a girl playing tennis which he printed on grainy paper, and sepia toned. As a budding pictorialist, he fumbled around with bromoil and was happy when he could turn a perfectly straightforward photograph into something that resembled an old painting. Sundays would find Eisenstaedt, camera on tripod, shooting cobwebs heavy with dew, little boats with girls' hands trailing in the glittering water, old ladies with sunlight dappling white hair. He sold a few pictorials to the roto section of the old *Berliner Tageblatt* until one day the editor said to him, pointing to the work of Dr. Erich Salomon then becoming famous through his candid camera pictures of European statesmen, "This is what you should be doing."

The remark was one of the turning points in Eisenstaedt's life. He bought what was the forerunner of today's miniature camera—an Ermanox, with a 1.8 lens, and which required that every picture be focused on a groundglass with a magnifying glass. He began to get regular assignments from German magazines, many of which he had to cover in white tie and tails. He had specially built pockets in his coattails for quantities of Ermanox plate holders. During this period he made the picture of Marlene Dietrich reproduced here.

At 11 o'clock on the morning of December 3, 1929, he quit his job in the button business and became a professional photographer. A week later he was in Stockholm covering his first story—the Nobel Prize ceremonies.

Eisenstaedt came to the United States on December 3, 1935, six years to the day after he became a news photographer. He was surprised to find that he was already famous over here—famous because his sharp and original eye for news pictures and his ingenuity and persistence in getting entire news stories in pictures had made him Europe's best-known press photographer. "If Salomon was the daddy of photojournalism," recalls Eisenstaedt, "I was his eldest son." They were the pioneers of candid photography and the sequential picture story, techniques basic to modern photojournalism which gave an immediacy and excitement to contemporary events and revolutionized picture reporting.

For example, when the Associated Press sent Eisenstaedt to Ethiopia in 1935, just before Mussolini invaded that country, he came back with more than 3,500 pictures revealing the life and the look of that remote land as never before. Eisenstaedt's pictures were more than a visual record because he has the gift of summing up a situation in one revealing detail. Take, for example, his famous picture (reproduced) of the bare, mud-caked feet of a soldier. The plight and fate of Ethiopia was conveyed unforgettably in that one sharply perceived picture. Eisenstaedt's pictures of Ethiopia have never grown stale. They have been used over and over again in newspapers and magazines across the world.

What Eisenstaedt did in Ethiopia with his camera we take for granted today, but 20 years ago it took creative courage to depart from the one-picture idea of news coverage and give an event perspective and meaning by photographing its significant and revealing details. The result was that people looking at Eisenstaedt's picture stories suddenly became participants in the drama of current events. Even in Eisenstaedt's earliest picture essays this feeling of presence is excitingly conveyed.

In America, Eisenstaedt entered upon his greatest opportunity. Very soon he was working on an experimental magazine which in November 1936 became *Life*. That was nearly 20 years ago. Now, a million negatives later, after some 1200 assignments and 53 *Life* covers, Eisie, as his colleagues call him, is more than ever the pro who comes home with the story.

Eisenstaedt once was tied to the flying bridge of the *Queen Elizabeth* for six hours so that he could portray the fury of an Atlantic hurricane. More recently, he was blown into the sea with his cameras while covering Hurricane Carol.

For the sake of a story he was led blindfolded to a gamblers' hideout in Tokyo from which there might have been no return. On the trail of a story, Eisie never gives up. During the 1952 Republican National Convention he was assigned to cover Governor Fine of Pennsylvania, a presidential aspirant adept at eluding everybody, including his personal staff. When the governor was missing one day, an aide seized Eisie by the shoulders and shook him saying, "Where is he? You *must* tell us where he is."

Eisenstaedt covered the Mau Mau terror in Kenya and spent three months in Dutch Guiana where, bitten by ants, stung by bees, and pursued by lethal snakes, he photographed the unexplored rain forest, greatly adding to the world's meager picture knowledge of that remote region.

This is not bravado. Eisenstaedt is a great photographer because, among other reasons, he has a knack for being in the right spot at the right time to get the best pictures. The hazards, difficulties, discomforts of arriving at that spot mean nothing to him. He is not conscious of them. "When I have a camera in my hands I do not know fear," he will tell you softly. "I do not let myself think at the time about what I may go through to get a picture."

It is only fair to record that Eisie has been caught napping on a story. On an assignment some years ago to photograph moose, he got up morning after morning at four o'clock and waited silently for moose to appear. Once he dozed—to be awakened by a moose licking his cheek.

Eisenstaedt keeps in constant photographic trim by handling many small routine assignments. He spent three days with a Fuller Brush salesman on his door-bell-ringing rounds, and photographed a day in the life of a dog. He sat with his Leica making pictures straight from the movie screen because stills made this way are more authentic than the tired re-

takes done for publicity during the actual shooting of a movie. In these private showings Eisie can stop the picture whenever he wishes, but he prefers to let the film run on, trusting to his own sharp sense of anticipation to get his pictures at the peak of action or emotion. "These small assignments keep me young, fit, and jumpy," he says. "The time lag between major assignments is too great and rest is not good for photographers."

It is as a portraitist that Eisenstaedt has done perhaps his greatest and most enduring work. He has photographed more famous people than any other living photographer—actresses, statesmen, tyrants, soldiers, babies, and emperors, an amazing range of the great and the not so great. Eisie does not flatter his subjects. In fact, he is a leader of the "no, don't smile" school of portraiture. His portraits are completely honest and direct, yet Eisenstaedt has an uncanny ability to catch the personalities of his subjects at moments of great intensity of expression. Eisenstaedt likes people, and his warm, sympathetic approach, touched with the authority of a master portraitist who will brook no nonsense, makes his portraiture powerful.

His "Portfolio of Distinguished Britons" is a supreme example of his artistry, and it is remarkable that all the Englishmen he photographed (the portrait of Father d'Arcy is from this series) saw him come and go in not more than twenty minutes. Often he has taken the portrait he suddenly saw and wanted before the subject realized it was being taken. Eisenstaedt does not intrude himself or any preconception of his subject into the work at hand. He, quietly and in the most friendly way, watches his subject with the utmost sensitivity and then gets the picture he wants. The result is that the viewer gets the impression of sitting across the table from the person who is looking at him from the printed page.

Eisenstaedt's favorite portrait subject—and he had never spoken to her—is England's Queen Mother because of her charm and the radiance of her personality. A subject he dislikes is a royal duke of the same family who treats photog-

Itinerary for Eisenstaedt Exhibit

Date	*Location*
1955	
Oct. 10-25	Institute of Contemporary Design, Boston, Mass.
November	University of Maine, Orono, Maine
December	Philadelphia Museum School, Philadelphia, Pa.
1956	
Jan. 13-Feb. 22	Portland Art Museum, Portland, Ore.
Mar. 30-Apr. 22	Museum of Fine Art, Richmond, Va.
May 10-24	Ohio University, Athens, Ohio
August	Taylor Museum, Colorado Springs, Colo.
Oct. 1-30	Speed Art Museum, Louisville, Ky.
December	Walker Art Center, Minneapolis, Minn.

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raphers like space—he looks straight through them. Eisie's most unpleasant portrait subject was an Italian child movie actor who reared up in the middle of a portrait session and savagely bit Eisenstaedt's hand.

When Eisenstaedt goes out on an assignment he ponders it for a long time. He is a slow starter and his first pictures are often experimental and fumbling. But when he gets the "feel" of a story or a situation he transforms it from a conventional camera record into an exciting visual adventure. The viewer is led to participate in it, and the sense of participation is always sharply conveyed. If Eisenstaedt is a one-man task force on a news story it is thanks partly to plain professional discipline and hard work. Part of it also is Eisie's insatiable curiosity and his fund of ideas. "I have to close my eyes," he once said during a long and arduous story. "I keep seeing too many pictures."

Eisenstaedt is his own hardest task master. He knows intuitively when he has the picture he wants—and when he hasn't. And he has the infinite patience of the perfectionist. In Florida, on assignment with a color camera to do a story on the Everglades, he wanted a picture of a Roseate Spoonbill taking wing. He paddled a skiff along a river bank as close as he dared to a Roseate Spoonbill on a treetop and then waited three hours, camera poised on a tripod. When, in a split second, the bird took wing, Eisenstaedt was ready—and made a unique and memorable picture.

If Eisenstaedt's method of working has an important lesson for the amateur it is this—he has the simplest of equipment. He would prefer to carry only one Leica while shooting a story, but usually he has to carry two. (He has used the Leica almost exclusively for nearly ten years.) Eisenstaedt carries his camera inconspicuously (whenever he can) and on it there often is a wide-angle lens. When the story calls for a greater range of equipment, he will keep another Leica nearby with a standard lens, and perhaps another loaded with Kodachrome. Eisie hates gadgets and supplementary equipment, but on occasion he will tote a 135-mm and a 90-mm telephoto lens and worry constantly about their safety. Eisenstaedt still uses a Leica he bought in way back in 1934.

"To be a good news photographer," he says, "you have to keep up with what is going on in the world and be interested in what people are doing that makes news. You have to have broad cultural interests. You have to be able to get along equally well with politicians, movie stars, window cleaners, and chauffeurs, with the ladies of the *haute monde* and the *demi monde*. You have to get along well even with editors.

"A lot of people ought to remember that the camera alone does not make the photographer. It's the brain behind the camera eye that's important. Most photographers are imitators of other photographers and they think the most important thing is to be technically perfect. it's wonderful if you are a good technician, but it's infinitely better to convey the feeling and emotion of your subject. I started out in the early days of the miniature camera when nobody knew anything about it. I was lucky because I had to develop my techniques as I went along. I couldn't possibly become an imitator. I had to develop a built-in self-confidence and strike out on my own as best I could."

It seems to go without saying that Eisenstaedt, when he is not on assignment, is like the postman who goes for a walk on his day off. He sees pictures everywhere. When he walks into a room he reacts immediately to the quality of the light, and the mathematical machine in his mind begins to calculate exposures, depth of focus, and camera angle. He watches picture situations and portraits evolving and disappearing as people come and go, and he sums up his reactions this way: "If Marlene Dietrich were in the room and she dropped her handbag, one's first impulse of course would be to pick it up for her. But not mine as a photographer. When she stooped to pick up her handbag herself, I might get my greatest picture.

●

What You Can Learn From Alfred Eisenstaedt

After 25 years as a professional photojournalist, Alfred Eisenstaedt has some definite, and helpful, ideas about the camera and its use. In the first place, he stresses the importance of not letting gadgets and technique assume first importance in your work. "I do not want too much junk in my locker," says Eisenstaedt. "I buy stuff only when I can improve the quality of my pictures by doing so." As typical of what he considers the wrong approach to pictures he remembers the questions once asked him by a class of journalism students. "They wanted to know how I got rid of the grain, but nobody asked how did I see this picture or that."

Eisenstaedt's own working methods bear out his beliefs. He works very simply: a 35-mm camera with a normal 50-mm or sometimes a wide-angle 35-mm or 28-mm lens. He rarely uses flash, preferring to shoot quickly and unobstrusively by available light. He is somewhat unimpressed with recent technical developments such as superfast films and new high-energy developers. Amateurs today who feel handicapped by lack of expensive equipment might well ruminate on the fact that Eisenstaedt was making fine available-light pictures back when $f/2$ was a fantastic lens speed and ASA 100 was the top exposure index for available films. His trick holds good today—just make long exposures. Practice holding your camera steady at slow shutter speeds, make use of any natural supports you can find, and perfect your sense of timing so you can catch the subject during moments of arrested motion.

Eisenstaedt believes that the ability to see pictures is an inborn talent, but that given a certain measure of this ability anybody can greatly increase it through constant practice. He likens the trained

photographer's skill at instantly recognizing the picture possibilities in a scene to the "rapid reader" who can take in the sense of a whole paragraph or even an entire page at a glance. The amateur who wants to improve his pictures should constantly strive to see the good picture possibilities around him, whether or not he has a camera in his hand.

Finally, Eisenstaedt is an example of the very human kind of photographer who likes people, is able to put them at their ease, and get close to them both physically and psychologically. This kind of skill doesn't come from textbooks, obviously. But most of us need to be reminded from time to time that technical skill or even a good eye alone is not enough. A photographer is also a person and his total personality will be reflected in his work. Therefore, if you would photograph people, increasing your ability to understand and get along with the rest of humanity is just as important as mastering your camera.—▶

new books

A GUIDE TO UNDERWATER PHOTOGRAPHY, by Dimitri Rebikoff and Paul Cherney, published by Greenberg: Publisher, 201 E. 57th St., New York 22, N. Y. Paper bound, 5x8, illustrated, 95 pages, $1.95.

The book summarizes the development and uses of underwater photography and explains the basic photographic differences between conditions on land and water. Discussed in detail are the types of available equipment and fundamental techniques.

PINNY'S DAY AT PLAY SCHOOL, by Jane Belk Moncure, photographs by Morris H. Jaffe. Published by Lothrop, Lee & Shepard Co., Inc. Paper bound, 8¾ x 11¼, illustrated, $1.50.

For and about the preschool child, this book describes the real and "pretend" world of nursery school in black-and-white photographs and a minimum of words. The photographer, Morris Jaffe, has won prizes in the POPULAR PHOTOGRAPHY Annual Pictures Contest and his work has appeared in PHOTOGRAPHY ANNUAL.

THE FACE OF NEW YORK, photographs by Andreas Feininger, history and description by Susan E. Lyman. Published by Crown Publishers, Inc., 419 Fourth Ave., New York. Cloth bound, 9 x 12, illustrated, $5.00.

An unusual collection of prints, photographs, and drawings of New York scenes and landmarks from the early Seventeenth to the early Twentieth Centuries is contrasted to Andreas Feininger's photographs of them as they are today. Each two-page spread of old and new pictures is amplified by full technical data. The result is a sampling of how 350 years has changed "the face of New York."

The book is devoted almost exclusively to civic features and landmarks which are unique to New York, and which give the city its special character. The quality of the engravings is high and permits comparison of small details. Feininger has not only taken the "as it is" pictures, but he has also made all the reproductions of historical illustrations used in this volume.—▶

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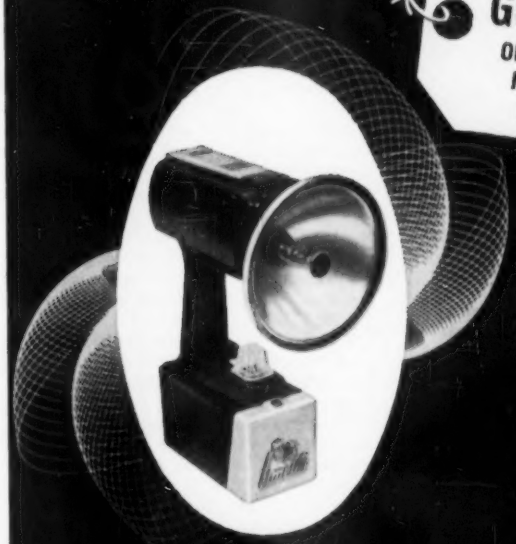

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How to Make Perfect Negatives

(*Continued from page 81*)

for a prescribed time while the developer is maintained at a constant recommended temperature. This method is quite satisfactory under normal conditions, yet there is always an element of uncertainty because you don't see what is happening until it is too late to make corrections. The developer may be contaminated or exhausted, your exposure meter may have been out of order, or you may have made a mistake. Any deviation from the prescribed procedure will result in imperfect, or even unusable negatives.

You can prevent mistakes and/or accidents if you develop by *inspection*. Instructions enclosed with the film usually allow inspection of the negative toward the end of the developing time by the light of a dark-green safelight (dark-red for ortho films). This is somewhat better than developing blindly, but it isn't always adequate. Some people can see very little under a green safelight, and the film may be fogged if you inspect it too long or hold it too close to the light.

You will get the greatest number of good negatives if you develop by inspection after you have *desensitized* your films. The procedure is simple and the improved results make its application more than worthwhile.

Dissolve a 15-grain packet of Ansco Pinakryptol Green in 8 oz of warm distilled water. When it is dissolved add 8 oz of denatured alcohol. This *desensitizer stock solution* should be kept in a brown bottle. For the *working solution* mix one part of this stock solution with one part of denatured alcohol and nine parts of distilled water. Make up enough working solution to fill your developing tank. To prevent spoilage store the desensitizer stock and working solutions in the refrigerator. The desensitizer does not become exhausted. When the working solution is not enough to cover the films in the tank, make up the necessary amount of fresh working solution and add it to the old one. When the desensitizer is full of sludge from use, discard it and make a fresh batch of working solution. In average use the desensitizer will last from 6 months to a year.

To develop by the desensitizing-inspection method, follow these steps: Load the tank in the usual manner. Pour in the desensitizer working solution. Its temperature should be about 68 F. Agitate the film for about 5 minutes. Pour off the desensitizer, but do not rinse. Pour in the developer and continue developing as you usually do.

After about one half of the recommended developing time has elapsed, you can open the tank and inspect the film by the comparatively bright light of a Wratten OA, Ansco A6, or similar yellowish-green safelight. Hold the film about 3 feet away from the safelight.

Take out the reel, lift up the end of the film with your finger. Peel off a short length of film (a few frames) and look at the emulsion side (inside) of the film on the reel. Do *not* look *through* the film. After inspection, replace it on the reel. To do so, pinch the film gently by the edges and hold it arched while the other hand turns the reel, pulling the film from between your fingers. Replace the reel in the tank, put on the cover again. Continue developing; agitate regularly. Inspect the film again in a few minutes. Keep developing and inspecting until desired density is reached.

Your negatives should be exposed carefully according to an accurate exposure-meter reading, even if you develop by inspection. All negatives on a single roll of film should reach completion of development at about the same time.

POPULAR PHOTOGRAPHY

"We've got to run along . . . I'm afraid little Jasper has made a nuisance of himself."

In the beginning you may have difficulty deciding under the safelight when development is completed. There is a simple way to learn how to judge: use an entire roll of film, photographing one subject with the same exposure. Prepare one of the fast-acting fixers (Quick-Fix, NH-5, etc.) in a white enamel tray. Place a light with a 60-watt bulb next to the tray, so that the light will reach the bottom of the tray.

Desensitize the roll and start to develop as described above. When the developed image appears to be almost right under the safelight, cut off one frame and drop it into the quick fixer. Close the tank. The film will clear quickly in the hypo. Turn on the light and inspect the cleared film by looking *through* it at the illuminated bottom of the white tray. This shows you how the finished negative will look. Since you have just seen the film under the safelight, you have a valid basis for comparing the appearance of the film under the safelight and that of the cleared film under white light.

Now inspect the next frame, cut it off, examine it under regular illumination when cleared. Repeat this frame-by-frame for the entire roll and you will have a pretty good idea of what a well-developed negative looks like under the safelight.

It would be ideal if we could show you a negative and tell you: this is the perfect negative, make all your negatives to match this one. Actually there is no such thing as a "perfect negative." Subject matter, photographic technique used, desired effect—all these factors influence negative quality. The type of your enlarger or contact printer, as well as the printing paper you use, also are to be considered.

The samples on page 00 show you some of the things to look for when judging negatives. Experience will teach you to decide whether or not yours are of good quality.

the final steps

When development is complete, rinse the film in water at about 68 F. Don't use a shortstop (acid rinse). Fix the film in fresh hypo that contains hardener. Agitate the film frequently in the hypo.

Wash the fixed film in running water. There are several ways to do this. You can place the open tank in the bathtub or kitchen sink and use a rubber hose attachment A filter over the faucet may be necessary in some localities where the water supply contains rust particles, sand or other sediment. Water filters are sold in photographic and in laboratory supply stores.

Hang the well-washed film with a film clip and use another film clip on the bottom as weight. Wipe off both sides of the film with a damp photographic viscose sponge and allow it to dry.

Cut up the dry film into convenient lengths and place it in glassine envelopes. Always handle the film by the edges only; never touch its surface on either side.

Your carefully processed and handled negatives will serve as good basis for your ultimate aim: the production of fine prints.—▶

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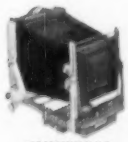

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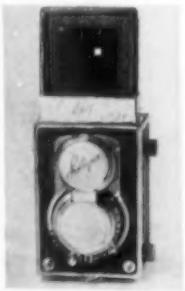
what's new — Trade Notes and News

All data and descriptions ascribed to products listed herein are those claimed by the manufacturers and distributors, and listings are not to be construed as endorsements by POPULAR PHOTOGRAPHY. For further information write to address given in trade note.

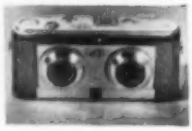
CAMERAS & ACCESSORIES

NIKON S-2 (covered in POPULAR PHOTOGRAPHY, March 1955) is now available in a black finish on special order only. With a 50-mm Nikkor *f*/2 lens, price is $319 and with a 50-mm Nikkor *f*/1.4 lens, $364.50. Either lens comes in a black mount. More information from J. C. Abbott, Nikon Inc., 277 Fifth Ave., New York 16.

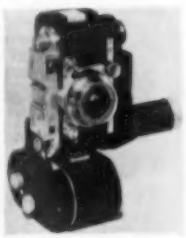
ANSCO announces leather-like Traveler Carrying Cases supplied without charge with three camera outfits. The Ansco Readyflash camera, flashing unit, four flashbulbs, and a roll of All-Weather Pan film is priced at $16.85; Anscoflex II reflex-type camera, Eveready case, flashing unit, four flashbulbs, and two rolls of All-Weather Pan film, $27.95; the Memar 35-mm camera, Eveready case, flashing unit, and a cartridge of 35-mm Anscochrome film, $56.25. Write to Kenneth S. Johnson, Ansco News Bureau, 175 Clinton St., Binghamton, N. Y., for more details.



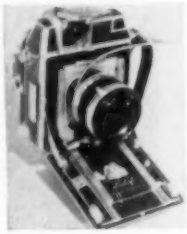
SOLIGOR twin-lens reflex camera, introduced by Interstate Photo Supply Corp., 12 W. 17th St., New York 11, features Soligar *f*/3.5 lenses; groundglass focusing with built-in prism rangefinder; critical magnifier; eye-level sportsfinder; FX synchronization with body Prontor-type shutter release; seven shutter speeds to 1/200 sec. Price is $39.50 and additional information is available.



REALIST 45 camera is introduced by Realist, Inc., 315 W. Court St., Milwaukee, Wis., as an addition to its stereo line. Among features are a wind lever which advances film and cocks shutter; internal focusing at the film plane; depth-of-field scale; shutter speeds of 1/25 to 1/200 sec & B; synchronization for regular and electronic flash; automatic exposure counter sets at zero after film is loaded; intentional double exposure possible. Price is $88.50 and additional information is available.



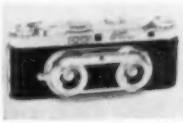
ROBOT ROYAL 400 SHOT camera is announced by Intercontinental Marketing Corp., 251 Fourth Ave., N.Y.C. A cassette (or magazine) supplied with the camera holds 33 ft of standard 35-mm film, yielding 400 exposures. A burst of 24 shots is possible with one winding of the built-in spring motor. Except for the back-cover hinging and a special, geared take-up knob, the camera is similar in appearance and operation as the Robot Royal III. Prices, depending upon the camera lens, start at $550. Optional spring-wound and electric-drive booster motors will be available shortly.



LINHOF SUPER TECHNIKA "SPECIAL" 23 is supplied with three lenses made especially for this 2¼x3¼ camera. Lens information is: 53-mm Biogon *f*/4.5 wide-angle in Compur Rapid MX Synchro-Press shutter with speeds to 1/500 sec; 180-mm Sonar *f*/4.8 in same shutter but to 1/400 sec; 100-mm Planar *f*/2.8 in similar shutter but MXV synchronization. All lenses are Carl Zeiss, couple to the Multifocus rangefinder by means of a rotary-cam disk for instant change-over from one cam sector to another. Price of camera and lenses is $1245, correspondingly lower with two or one lenses. More information and complete price list of units and lenses from Kling Photo Corp., 235 Fourth Ave., New York 3.

FOLDING LEATHER BELLOWS assembly for use with all Hasselblad cameras has fittings on both ends to fit camera and lens; a graduated scale on the milled rail showing amount of exposure required for specific extension; and can take auxiliary tubes for greater magnification. Available at Hasselblad dealers or write Willoughbys-Wholesale, 110 W. 32nd St., New York 1, N. Y.

KODAK PONY 135 MODEL C is announced by Eastman Kodak Co., Rochester, N. Y. Among features are a pre-set between-the-lens shutter with speeds to 1/300 sec; synchronization for Class F bulbs at all speeds except 1/300 and for Class M at "B" and 1/25 sec; rim setting speed selector; no-thread loading; automatic film stop and exposure counter; fixed-position lens tube; 44-mm Kodak Anaston *f*/3.5 lens with aperture range to *f*/22. Price is $33.75; outfit including camera, field case, Kodak Flashholder and Flashguard, is priced at $49.65.



EDIXA IIIA is similar to the Edixa stereo camera (described in this column, September 1955 issue) but features a built-in exposure meter. Film speed rating scale is calibrated for ASA and Din; the meter lens openings range from *f*/1.4 to *f*/22; shutter speed range reads from 1/1000 to 2 sec. Price is $99.50 and full details may be had from Camera Specialty Co., Bronxville, N. Y.

PRISM FINDER of precision type is announced by Kine Camera Co., 11 W. 20th St., New York 11, N. Y. The Prism Finder, plus a Split Image Finder, both in a velvet-lined leather case, is priced at $70, and the Split Image Finder is sold separately for $28. See your dealer or write directly.

LENSES & ACCESSORIES

135-mm TELORDON *f*/4 telephoto lens couples automatically to the rangefinder of the Lordomat camera; has click stops to *f*/22; depth-of-field scale. Price, $99.50, includes registration and guarantee. More information from Royal Photo Distributors, 78 W. 47th St., New York 36.

POLAROID CORP., Cambridge Mass., announces accessories for the Speedliner and Highlander models of Polaroid Land cameras and PolaPan films. Lens shade #545 is claimed to eliminate washed-out prints when back- or strong side-lighting methods are used. Non-polarizing orange filter #546

is used for dramatic effects. Both accessories clip to the camera lens ring or to any 30- to 32-mm lens. Prices are, respectively, $2.45 and $1.95.

WALZ LENS HOODS in bayonet or screw-in mounts are announced by U. S. Photo Supply Co., 1204 G St. N.W., Washington 5, D. C. They can be used directly on the camera or on a Walz filter. A square hood is available for Rollei f/3.5 lenses. Another, for the Leica Summicron f/2 lens has panoramic cutouts to eliminate blocking of rangefinder visibility. Price is $3.95 for either hood. Other models are priced the same as corresponding Walz filters.

DUAL-LENS enables an 8-mm camera user to take telephoto and wide-angle movies with this one, reversible lens. Used in one position for telephoto, the lens is turned over for wide-angle. Ednalite Optical Co., Inc., Peekskill, N. Y. claims no light compensation is required. Corrected for color and with hard-coated optics, the lens is priced at $24.95, including carrying case and two-piece filter holder, and will fit most 8-mm cameras now on the market. For cameras without variable viewfinders, a two-way viewfinder is available.

KENT LENS BRUSH is a retractable camel's hair brush in a fountain-pen type case. Distributed by Arel, Inc., 4916 Shaw Ave., St. Louis 10, Mo., price is $1.

OBJECTIVES for 17-mm wide-angle and 3-in. telephoto lenses on 16-mm B & H cameras are priced at $5.95. Information available from Accura Industries, 67 Forest Rd., Valley Stream, N. Y.

1½-in. KINOTEL f/1.9 telephoto lens for the 8-mm Kodak Magazine camera is announced by PIDC, 135 Broadway, New York City. Coated, color-corrected, and with click stops, price is $39.95, including case. More details available.

STEINHEIL LENSES for 35-mm still and 8-mm movie cameras are described in a brochure available from Camera Specialty Co., 705 Bronx River Rd., Bronxville, N. Y.

FILTERS

EDIXA optical-glass filters in mounts designed for use on Edixa cameras do not require an adapter since they have a 3-mm threaded mount. An outside thread accommodates a sunshade. Filters available presently are Y-1, Y-2, G-2, R-1, and UV. Price is $1.95 each at camera stores and are guaranteed by Camera Specialty Co., Bronxville 8, N. Y.

VITESSA FILTERS are announced by Tiffen Marketing Co., 71 Jane St., Roslyn, L. I., N. Y. These custom-mounted Type A, Skylight 1-A, and #81-C type filters are coated on both sides, come in snap-in mounts, and remain on the Vitessa lens mount when the camera case is closed. Price is $4.25 each.

ALFA PHOTO CORP., 303 W. 42nd St., New York 36, N. Y., has been appointed American agent for optical and filter glass manufactured by Chance Brothers Limited of Birmingham, Eng. Catalogs and price information will be furnished on request.

U. S. PHOTO SUPPLY CO., 1204 G St. N.W., Washington 5, D. C., announces a slip-on Cloud-Filter and a close-up attachment (No. 13) for Brownie Hawkeyes, and a No. 6A for Duaflex and Argus 75 cameras. These additions to the Walz filter line are priced at $1.85 each.

ROLLEI FILTERS for f/3.5 models are set in bayonet mounts and come in all colors. Enteco Industries, Inc., 610 Kosciusko St., Brooklyn 21, N. Y., announces the price at $4.50 each, with case.

WALZ MOVIE FILTERS and matching lens hoods are announced by U. S. Photo Supply Co., 1204 G St. N.W., Washington 5, D. C. Each filter (Type A conversion and Skylight) is individually mounted. Threads on both sides are for camera mounting and for accommodating a Walz lens hood. Prices are $1.95 each. Names of accessories and cameras they fit are: Model E.B. for f/2.7 Brownie; B.H. for B&H 220 and 252; R for

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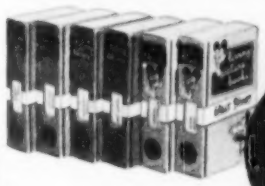

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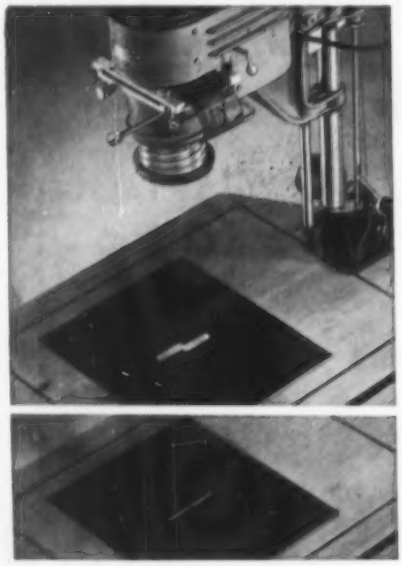

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8-mm Keystone and Revere *f*/2.5 and *f*/1.9, T for Keystone K-25 and DeJur 8- and 16-mm movie cameras *f*/2.5.

SCREW-IN FILTERS in individual mounts for cameras having threaded lens mounts are announced by Enteco Industries, Inc., 610 Kosciusko St., Brooklyn 21. Available in sizes from Ser. IV to Ser. XIII, prices begin at $2.50 each. Write for free, complete listing.

PROJECTION & VIEWING EQUIPMENT

MANSFIELD INDUSTRIES, INC., 1227 Loyola Ave., Chicago 26, announces portable film editors for 8- and 16-mm movie film. The action viewer incorporates both framing and focusing controls; rewinds holding 400-ft reels fold when not in use; and the splicer has a radial scraping blade. Prices are, respectively, $45 and $49.50, including Cinement splicing liquid and carrying case.

Y-DANGLE, 716 Wilshire Blvd., Santa Monica, Calif., announces an accessory lens for 8- and 16-mm projectors claimed to give 3x to 4x image magnification when placed in front of the regular lens. Price is $7.95.

MOVIE EDITING EQUIPMENT for home-movie makers is now packaged in component parts by the Kalart Co., Plainville, Conn. Basic equipment consisting of a pair of Craig rewinds and a Master splicer are priced at under $18. When needed, a Craig Viewer may be purchased for $49.50. Mounting boards are also available.

BAJA AE-303 is the name of a slide-tray file made by Barnett & Jaffe, 6160 N. 21st St., Philadelphia 38. Of sectional design, it can be used for portability (one section) or for storage (both sections). Carrying lid fits either of the sections, which are available separately. It will accommodate 30 Airequipt magazines or 6-in. LaBelle trays and is priced at $7.95, complete.

DA-LITE HANDY, a table-top or wall-hanging projection screen is now offered with a glass-beaded surface. Price is $7.25 for a 30x30-in. size. More information from Da-Lite Screen Co., Inc., 2711-23 N. Pulaski Rd., Chicago 39.

EMDE PRODUCTS, 2028 Stoner Ave., Los Angeles 25, Calif., has added to its extensive line a new aluminum binder for Eastman Kodak 2x2 Readymounts. The new 2x2 Emde mounts are packaged 100 to a box, with 200 pieces of clear-white micro glass. A box costs $8.50.

ROCKET AUTOMATIC 35-mm slide projector is announced by Brumberger Sales Corp., 34—34th St., Brooklyn 32, N. Y. Price is $59.50.

DIRECTOR 300, product of LaBelle Sales Corp., Oconomowoc, Wis., is the company's newest 35-mm "touch-system" automatic slide projector. Capacity, like that of more expensive models, is 150 slides. Price is $59.50.

STEREO ROYAL GROUP VIEWER Model 1A is a rear-projection-type stereo viewer. It features interocularly calibrated matched 50-mm color-corrected and coated lenses; projection in ordinary room light; two-way V-type reflector system; slide holder and case holding up to 150 slides in cardboard mounts; viewing of slides in glass, paper, or plastic mounts; an attachment included with the unit provides 2D projection; a-c—d-c operation. The price is $69.95 and more information is available from Stereocraft, Inc., 296 Pearl St., New York 38.

RADIANT MFG. CORP., 2627 W. Roosevelt Rd., Chicago 8, announces a restyling of its tripod line. New case designs, leg openings, and tripod construction are featured on all Colormaster, Screenmaster, and Champion models.

STEREO STORAGE and carrying cases are announced by the Three Dimension Co., 3512 N. Kostner Ave., Chicago 41, Ill. The CV2 holds 25 glass or cardboard ASA standard mounted slides and a TDC Stereo Vivid DeLuxe Viewer. The CV3 holds the viewer, 100 slides, and two spare batteries. The

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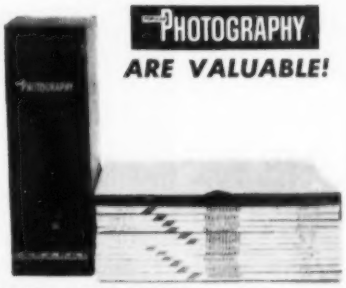

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CST4 accommodates three Selectrays and viewer, or four trays, while the CST8 holds eight Selectrays. Index sheet supplied with all cases. Leatherette covered, prices are respectively, $5.75, $10, $8, $12.

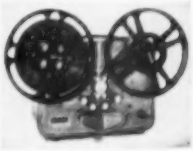
AUTOMATIC is the name of an automatic wall and ceiling projection screen for professional-type installations. Some features are a non-stretching brake lining; solenoid-operated brake mechanism; concealed safety roller lock; and a micro-switch claimed to assure trouble-free limit-control action and perfect adjustment. Available in eight sizes from 6x8-ft to 12x12-ft, prices start at $245. More information from Mr. Geo. Bauman, Radiant Mfg. Corp., 2627 W. Roosevelt Ave., Chicago 8.

SOUND PROJECTION EQUIPMENT

VU MAGNEMITE is a battery-operated, spring-motorized, portable tape recorder. A VU meter acts as recording level indicator, and A and B battery meter, giving the correct setting of recording and playback levels to compensate for battery voltage changes. Available in one-, two-, three-, and four-speed models, price is $385 for the 7½ ips model. Add $30 for a Weathertite aluminum case. Details and prices available from Amplifier Corp. of America., 398 Broadway, New York 13.

47-A FME tape recorder is announced by Federal Mfg. & Eng. Corp., 199 Steuben St., Brooklyn, N. Y. Similar to the previous Model 37-C it has the following additional features: reversible automatic counter; extra output jack; improved one-hand selector level for fast switch for fast forward to pause, to play, and record. Price, $159.50, includes ceramic microphone, reel of tape, take-up reel, detachable power cord, and patch cord. More information available.

PLASTIC REEL with glass reinforcement is a product of Minnesota Mining and Mfg. Co., St. Paul, Minn. Its diameter is 10½ in. and the center hole, measuring but 5/16 in., is said to provide improved centering and balance, with added strength. The one-piece construction replaces the three pieces of metal reel usually held together by bolts, and rounded edges are said to eliminate nicks in tape edges. Capacity is 2,400 ft of regular tape or 3,600 ft of the thinner variety. Price is $1.50 each.



MODEL S6 system for portable recordings operates from normal a-c sources or from batteries. For use with 16- or 17½-mm film, price range of this magnetic film equipment is from $1,122 to $1,850. Full details of the system are available from Stancil-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.

FILM

MINOX FILM is announced in new, multicolor packaging. A mailing bag for processing service is included with each cartridge. Daylight color film is now packed one 36-exp. cartridge to the box, priced at $1.95; processing charge remains unchanged. Distributor of the Minox line is Kling Photo Corp., 235 Fourth Ave., New York 3.

CINE-KODAK TRI-X C-P REVERSAL FILM is announced by Eastman Kodak Co., Rochester, N. Y. as having exposure indexes of ASA 200 in daylight and ASA 160 with tungsten light. It is claimed to withstand somewhat higher processing temperatures than Super-XX C-P Reversal Film, possessing sufficient exposure and development latitude to permit its use at speeds higher than its normally rated speed. In bright sunlight and with cameras having fixed shutter speeds, a Kodak ND-3 filter placed over the lens cuts down brightness by three stops. As an alternate, the Kodak

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Wratten X2 filter which results in little change in the monochromatic rendering of colored subjects, can be used. Price of a 100-foot roll on camera spool is $4.85. It is also available in a 200-ft spool and a 400-ft roll for darkroom loading, either double-perforated or perforated on one side, and on special order spooled for the Kodak High Speed or 16-mm Fastax cameras.

EKTACHROME E-2 FILM is announced by Eastman Kodak Co., Rochester, N. Y., as being available in 120 and 620 roll film sizes. Daylight Type with an exposure index of ASA 32 can also be used with blue flash lamps without a corrective filter. Type F film is balanced for use with clear flash lamps and does not require a filter. Guide number is 110 when used with No. 5 or No. 25 flash lamps, with the shutter set at 1/50 sec. Film is priced at $1.25 per roll. Processing is done with E-2 Kodak Ektachrome chemicals.

DARKROOM EQUIPMENT

ANTI-STATIC SOLUTION for use with plastic optical filters for Varigam variable-contrast papers is now available in a three-oz. bottle. Du Pont, Wilmington, Del., claims one drop of the solution rubbed on each side minimizes static and dust-attracting characteristics of these filters and lasts until they are washed. The price is $1.25.

MODEL E FOTO-LARGER accommodating negatives from 35mm to 2¼x2¼ in. is announced by Testrite Instrument Co., Inc., 57 E. 11th St., New York 3. Some features are 1x to 6x enlargement (with 90-mm lens) on 16x19 baseboard; distortion-control knob on arm; tilt control for horizontal projection; aluminum lamphouse; engraved scale showing degree of enlargement. Available as a diffusion model, prices start at $32.95, without lens, and condensers can be added. With a 90-mm f/6.9 rangefinder lens, price is $37.95. A full line of accessories is available.

AQUA-LAB, a water demineralizer, uses a replaceable cartridge filled with special resins providing mineral-free water for darkroom use. An automatic-warning mineral detector signals the necessity for a new cartridge. For a reserve supply of demineralized water, the unit can remain connected to the water supply. A metal stand is supplied for portability. Price is $72.50. More information from Automatic Steam Prods. Corp., 140 W. 31st St., New York City.

CLAYTON CF-9 is an addition to the processing chemical line of Clayton Chemical Co., 5420 N. Damen Ave., Chicago 25, Ill. A speed fixer-hardener, a qt concentrate makes up to two gal of working solution. Price is $1.25 per quart.

ILG Electrical Ventilating Co., 2850 N. Pulaski Rd., Chicago 41, announces a darkroom ventilator claimed to have an air-moving capacity of 260 cubic ft per minute; to be silent and lightproof. Model #5122, for outside wall installation is priced at $98.25 and model #5130, for partition wall installation, is priced at $69.75.

ANTI-STAT #6 SPRAY is claimed to end static and dust problems with one spraying. It can be used on film holders, negative carriers and glass on enlargers, films, plastics, etc. A product of Braun Laboratories, 206 S. Hutchinson St., Philadelphia 7, the price is $2.95 per 12-oz spray can.

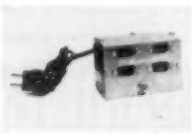
ANSCO PRINTING FOILS are now marketed in yellow, magenta, and cyan with decimal-system calibrations, replacing the present color-compensating foils used for printing on Printon. Color density varies in color by a factor of two; .50Y (yellow) is twice as dense as .40Y; the .40Y is twice as dense as the .30Y; etc. Supplied in seven densities and in 4x5, 6⅝x6⅝, and 8x10 sizes, prices are 40, 60, and 75 cents, respectively. More information available from Kenneth S. Johnson, Ansco News Bureau, 175 Clinton St., Binghamton, N. Y.

FRED Z LITE is a standard pocket flashlight with a three-color turret designed for darkroom work. Red, green, and amber filters are supplied, although other gelatin filters may be substituted for special work. Manufactured by Fred Metlen, P.O. Box 2186, Seattle, Wash., the price is $4.75.

LIGHTING EQUIPMENT

ACME-LITE Mfg. Co., 401 N. Wood St., Chicago 22, announces the Hi-Fold No. 45 unit, designed for four 375-watt lamps. Featured are: center folding for portability (lamps need not be removed); 660-watt porcelain safety sockets; two 10-amp toggle switches; exposure Spindial; tripod socket. Price, less bulbs, is $8.98; in a compartment case with room for camera and accessories, Model 45-C, $16.95.

SMITH-VICTOR CORP., Lake & Colfax Sts., Griffith, Ind., announces the purchase of all floodlight designs and equipment of the Johnson Ventlite Co. The latter will continue its line of electronic flash equipment, expanding into the medical and industrial fields.



AEROTRONIC Model 902 Hi-Lo Box allows a photographer to reduce light output while composing, prolonging life of photofloods and reducing strain on the model. One switch offers three positions, low, high, and off. Price is $10.95 and additional information available from Aerotronic Assoc., Box 419, Concord, N. H.

MISCELLANEOUS

PICFRAME, an adjustable picture frame, takes photographs, mounts, and glass up to 27 in. high (through use of a locking ball-chain and spring device) and supports up to eight lb. weight. Channels are of neutral gray or clear Styron plastic. Working parts are of steel. Price is $1.50 ppd from The Picframe Co., 320 Laverne Ave., Mill Valley, Calif.

LEICA PRODUCT DIRECTORY contains tables, charts, and miscellaneous data applicable to all cameras and projection systems. Available at Leica dealers or from E. Leitz, Inc., 468 Fourth Ave., New York, N. Y.

PHOTO-ART ON CANVAS, 1123 Broadway, New York 10, N. Y., offers a service for would-be painters among photographers. From negative or print it reproduces an image on artist's canvas and mounts it on masonite, ready for oil coloring. Instructions accompany the reproduction. Prices start at $6 for 8x10.

GEVAERT, INC., of Belgium offers a descriptive brochure on the English edition of *Photorama* through Rayelle Publications, 5700 Oxford St., Philadelphia 31, Pa. Subscription rates to the publication itself are $3 a year, $5.75 for two years.

LOU-WAL ENTERPRISES, P. O. Box 2, New Lots Sta., Brooklyn 8, N. Y., announce the availability of adhesive stamp photos from originals of any size. A sheet of fifty large or 100 small photo stamps costs $1.89, and the price for two sheets is $3.49.

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pair School, Dept. P., Box No. 174, Englewood, Colo., offers a brochure on this course.

EDWAL SCIENTIFIC PRODS. CORP., 420 W. 111th St., Chicago 28, Ill., cautions users of Edwal Anti-Static Color Film Cleaner to follow instructions faithfully to prevent possibility of film's buckling. A new product with the number 2 on the back label can be used on lacquered film and is non-curling. Replacement with the new cleaner will be made if soaked-off label of the Anti-Static solution is mailed to Edwal.

ARROW METAL PRODS., 108 N. Jefferson St., Chicago, announces streamlining and price reductions in its tripod line. The Bowman Lift 88 is now priced at $21.95; the Archer 88 is $17.95, reductions of $8 and $2, respectively. More information from manufacturer.

UNIVERSAL COLOR SLIDES, 235 William St., New York, N. Y., offers new boxed sets of eight slides on a wide variety of travel, human-interest, religious, etc., subjects at 25 cents each, or eight slides for $1.50, mounted and in a storage box.

CANVAS ENLARGEMENTS from a negative or photograph and ready for painting are announced by N. Y. Solar Print Co., 736 Broadway, New York, N. Y. Size and price range is 8x10 at $2 to 40x60 at $40. Information and price list available.

LINEX CORP., 15 E. 26th St., New York, N. Y., announces a plastic slide mount for Linex color transparencies which is claimed to eliminate the possibility of scratching during the mounting process. The mounts replace the older type and are now included in all Linex color film magazines.

READY-CUT MAT MOUNTS for prints from 4x5 to 16x20 in. are available in a wide array of shapes, sizes, and formats. Descriptions and prices in booklet "Dressing Up Your Photographs," from Savage Universal Corp., 480 Lexington Ave., New York 17, N. Y.

MINOX OWNER'S MANUAL is a guide to the use of this camera and its accessories, with instructions and tips on many phases of ultra-miniature photography. Obtainable at Minox dealers for 50 cents or from Kling Photo Corp., 235 Fourth Ave., New York 3, N. Y.

DH DEHYDRATED photographic emulsion is now available at camera stores for non-industrial use. This projection speed emulsion is added to water and can be used to sensitize almost any surface. A ¼-lb. package covers about 100 sq ft and is priced at $7. One-lb size available at $24.

PRICE REDUCTIONS are announced by Jiffy Enterprises, Inc., 1011 Chestnut St., Philadelphia 7, Pa., manufacturers of the Jiffy picture hangers, which are used without nails or screws. A package of six hangers, each holding up to 15 lb, is priced at 19 cents.

METALPHOTO process and applications are detailed in a four-page report available from the Metalphoto Corp., 2903 E. 79th St., Cleveland 4, Ohio, manufacturers of photosensitive aluminum plates.

RAYELLE PUB., 5700 Oxford St., Philadelphia 31, offers upon request, a revised price list containing the latest releases of Fountain Photo- and Cine-Books and the new Heering Photo-Books.

POCKET PEN-STAMPER is a combination ball-point pen and rubber stamp, useful for print identification. When pen cap is removed, three-line stamp springs out inked and ready for use. Price is $3, ppd. Send name and address printed on three lines, to Frerking, Dept. P, Ossining, N. Y. Allow two weeks for delivery.

AMERICAN STANDARDS ASSOC., 70 E. 45th St., New York 17, has published a list of American Standards in a new 1955 edition. 251 photographic items are included, and hobby cameras are included in a separate section on consumer goods. A copy may be had for the asking.

PHOTO-OIL COLOR PENCILS are used for fine detail work when coloring photographs. A set of 18 colors is available at all photo-supply dealers or direct from John G. Marshall Mfg. Co., Inc., 167 N. Ninth St., Brooklyn 11, N. Y. Price is $4.75.

KODAK BOOKS AND GUIDES, a new listing of the Kodak publications, is available, free of charge, from Sales Service Division, Eastman Kodak Company, Rochester 4, N. Y.

PERMAFILM HOME LAMINATING KIT for sealing photographs in plastic is used without machinery or tools, the process taking 30 seconds. Each kit contains eight

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5x6-in. sheets of Permafilm and is priced at $1, ppd. from The Bava Co., Dept. F-8, 3655 E. Canfield St., Detroit 7, Mich. Larger-size kits are available.

STATIC-DUSTER is a camel's-hair brush in a metal swivel tube, fitted with a protective cover. Designed to remove dust-attracting static electricity from lenses, negatives, and transparencies, it is guaranteed by Starr Corp., 49 W. 19th St., New York 11, to be harmless to even the most highly polished surfaces. Price is $2.

HOME MOVIES the New Table-Top Way, etc., is the title of a new Kalart publication offered free to our readers. For your copy address Customer Relation Dept., The Kalart Co., Plainville, Conn.

STICK-ON TABS for Varigam filters are designed to aid darkroom workers switching from graded-contrast papers to Varigam variable-contrast paper. When tabs are applied the No. 1 filter becomes No. 0 (corresponding to that grade of paper), the No. 2 becomes No. ½, etc. The tabs are available for ten cents from Du Pont Photo Prods., Room 2498, Nemours Bldg., Wilmington 98, Del., but are included without charge with new sets of filters.

PROXAR INFORMATION CHARTS are available without charge from Enteco Industries, Inc., 610 Kosciusko St., Brooklyn 21, N. Y. Data includes information on close-up photography and uses of Enteco Proxars, from one to ten diopters.

EXAKTA PRICE LIST furnishing consumer price information on the company's complete line of cameras, accessories, and publications, is available without charge from the Advertising Dept., Exakta Camera Co., Bronxville 8, N. Y.

INSURANCE SERVICE CO., 1603 Pioneer Bldg., St. Paul, Minn., offers an all-risk insurance policy for camera owners and dealers. The annual cost (one percent of the valuation) ranges from $1 to $100. Write for more details.

STICK-ALL is the name of a waterproof spray adhesive. Spraying the back of a print makes it instantly mountable on walls, paper, etc. By spraying mounting surface also, the bond is permanent. Available from photographic dealers, the price is $1.98 for an 11-oz spray can. Manufacturer is Chase Prods. Co., 2807 S. Gardner, Broadview, Ill.

TRANSLUCENT PHOTOGRAPHS with Kodak Translite Enlarging Paper and Kodak Translite File is the name of a four-page folder describing applications, methods, and handling of these products. Punched to fit the Kodak Photographic Handbook, it is free from the Sales Service Div., Eastman Kodak Co., Rochester 4, N. Y.

PRECISION-VISION, a five-power magnifier, is used for negative inspection and checking groundglass images in focusing. Two optically ground, polished, 1⅞-in. lenses are set in a break-resistant mounting; a black crinkle finish eliminates reflections. A product of S. B. Logan & Co., P. O. Box 498, Genoa City, Wisc., the price is $3.50.

PERMANENT FLUORESCENT IMAGES on Metalphoto aluminum plates are detailed in a catalog sheet available without charge from The Metalphoto Corp., 2903 E. 79th St., Cleveland 4.

PHOTO GREETING CARDS for holidays and special occasions are designed to feature your own photographs inserted into a specially constructed panel. Packaged in boxes of 20 for $1 (with matching envelopes) they are available from photo dealers or direct from Double Envelope Corp., Roanoke, Va.

ASA EXPOSURE COMPUTER for all-season, world-wide use is now available in a new edition, covering all black-and-white, color, still, and movie films. This 25-page vest-pocket-size booklet, No. PH2. 7-1955, may be obtained at $1.50 from the American Standards Assn., 70 E. 45th St., New York 17, N. Y.

MINOX PROCESSING LABS., Box 94, Forest Hills 75, N. Y., has adopted the use of a cloth cartridge mailing bag. Free processing bags and price lists upon request.

COPYING AND CLOSE-UP WITH ARGUS CAMERAS is a brochure available upon request from the Sales Service Div., Argus Camera, Inc., Ann Arbor, Mich. It offers basic suggestions and information on this somewhat specialized field.—►

Micromat-Color 35-mm Enlarger

(Continued from page 102)

ting that figure on the focus variator controls (5) on the base of the enlarger post. Any easel with a raised surface of up to about 1½ inches can be so adjusted for truly automatic-focus operation of the machine. This setting needs no further adjustment unless another easel of different height is used, or floor-projected enlargements are made.

The final innovation, and to many workers perhaps the most important, is the filter compartment (23) behind the control panel and just in front of the lamphouse. Upon dropping either color-correction filters or Varigam filters into this slot and flipping the dust cover closed, the printer is prepared for color enlarging or for black-and-white printing on variable-contrast papers. The position of the compartment is ideal from a projection standpoint; the light coming from the bulb passes through the filter at the most favorable time—after passing through the first condenser and before reaching the second condenser and the negative. Many other enlargers have similar arrangements, but none quite so ideal. The common methods are to filter the light before entering the condensers or after it has passed through both. With the setup used on the Micromat, the filter could be badly scratched or coated with considerable dirt without interfering with the projection of the image; whereas on machines in which the filters are placed near the image forming path (near the negative plane) dirt and scratches are focused too. Smaller color filters can be employed, at less cost, than on most competing designs.

The enlarger does not need to be cluttered up with "attachments" for Varigam variable-contrast filters, nor does extra money have to be spent on filter bellows in order to get the multi-grade filters inside the machine, where they belong. The vertical position of the filters in the Micromat-Color is also less conducive to the collection of dust on their surfaces than on other enlargers—a real boon to all of us who have gone slightly mad wiping the darn things clean!

The final feature of note is the baseboard mounting of the on-off switch (2), on the right-hand side in the front. If desired, electric print timers can be hooked up to this machine, as they can for any other make.

For all of the above stated reasons and for such auxiliary devices as a special negative carrier which will allow the use of the machine with sub-miniature film sizes (down to 8 mm); a special baseboard and socket, in Cardanic suspension, for total distortion corrections in specialized work; a copying illuminator for baseboard mounting with four individually operated lamps; and voltage regulators for maintaining desired color temperatures in color printing, the Durst Micromat-Color should prove to be an extremely successful design. Its acceptance by the public as the faithful partner to such famous-name 35-mm cameras as the Leica, Contax, Nikon, Canon, etc., should be assured.—►

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I'm Sick of Available-Light Photography

(*Continued from page 54*)

on unexposed grains in setting off a chain reaction that continues until the film is removed or the developer exhausted. This results in fog, which lessens the contrast already achieved. It also increases the size of grain clumps enormously. This fog and the consequent increase in opacity are the products of overdevelopment which many workers mistake for "total development."

Then, too, exhaust products in the developer are likely to initiate a form of physical development, thereby "plating" the metallic silver of the negative with a colloidal silver deposit. This further reduces contrast and increases grain size as well as opacity.

All of this I have found wholly unnecessary in most cases. Any photographer dedicated to available-light work ought, at the very outset, to learn to develop by inspection. Next, he ought to go right back to the beginning and learn about intensification*. With this fundamental knowledge to guide him, he can make the same pictures, in the same light, at the same exposure, and still end up with prints infinitely less grainy than those resulting from overnight development.

But even if he succeeds in making perfect pictures in dim light, he should heed the plea of an old hand not to concentrate on this type of photography to the exclusion of all others, particularly if he is just starting in this most satisfying of all hobbies. The great legacy of light that nature has bestowed upon us, and the vast and versatile array of artificial light sources placed at our command by science and industry, deserve his attention and use.

To ignore these resources entirely for available-light photography is like passing up all the luscious fruit in an orchard to get at one particular apple far out on a swaying limb. With Wordsworth I urge you to "Come forth into the light of things" instead of saying with the villain in *Oliver Twist*, "There's light enough for wot I've got to do."

•

INTENSIFICATION

By JOHN ADAM KNIGHT

Following is John Adam Knight's own description of how he uses chemical intensification in processing film exposed under low-intensity available light. He claims relatively fine-grain results for his method, which he refers to in his article, I'm sick of available-light photography! *on page 54. Although advocating development by inspection, Knight here tells what can be done by time-and-temperature processing.*

A year or so ago I photographed the wedding of a friend of mine in St. Patrick's Cathedral, in New York. It was a gloomy day in January and the interior of this vast edifice was just about the darkest spot in which anyone had ever attempted to make action pictures up to

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that time. Flash was barred, and to get anything at all with the ASA 80 Tungsten film, which was the fastest on the market then, I used a 2¼x2¼ roll-film camera with its f/2.8 lens stopped down to about f/3.2. I chose this camera because it gave me bigger images than a 35-mm camera, which was advantageous because I obviously couldn't breathe down the back of the reverend father's neck to shoot close-ups of the "I do" scenes. I had to work at a respectful distance, which meant about 30 feet for the altar scenes, 25 feet for the processions up and down the aisle.

I shot everything at 1/25 second, steadying the camera on pew backs whenever possible. Some of the scenes were so dark that I could not even focus.

At home that night I processed the film exactly three minutes, agitating constantly, in the following developer:

Metol	20 grains
Hydroquinone	50 grains
Sodium sulphite, desiccated	100 grains
Borax	200 grains
Water to make	20 ounces

This was followed quickly by four minutes in a potassium-chrome-alum hardening-stop bath, a rinse, then fixing in a fresh hardening-fixing bath. Hardening is particularly important when the negatives are to be intensified.

When washed and dried, the negatives proved to be almost grainless, but greatly underdeveloped, of course. I cut them apart and separated those which were comparatively flat from others that, because of the way the light fell, were relatively contrasty. The latter then were intensified with a proportional intensifier (Kodak In-5). The flat negatives I immersed from 30 to 120 seconds in a prepared (Victor) chrome intensifier, watching (in daylight) density and contrast build up to the desired extent.

I got brilliant 8x10 and 11x14 enlargements from every negative except one that was spoiled by movement too fast to be stopped at 1/25 second. Grain was discernible in some of the larger prints, but not enough to be objectionable.

This technique can be adapted to any film or any reasonable degree of underexposure, using my figures as a springboard. It may help you to make better available-light pictures whenever a real need arises, particularly if yours is a rather slow lens, or if you happen to be loaded with film slower than the very fastest.—

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3. BROCHURE: How to take pix of TV programs. Argus.

4. BROCHURE: Information on copy and close-up. Argus.

5. BROCHURE: Especially for teachers desiring to use a camera in classroom work. Argus.

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10. BOOKLET: The Practical Accessories for Rollei Cameras. 24 pp., illus. Burleigh Brooks.

11. BROCHURE: "Realist 35"; detailed facts on Model A and B; accessories. Realist, Inc.

12. BOOKLET: "The Voigtlander Line." Complete details, description full line; illus. Willoughby's Wholesale.

13. BOOKLET: The Robot Camera in Science and Industry. 4 pp., mimeo; Intercontinental Marketing.

14. BOOKLETS: (a) The Royal Robot; (b) Robot Underwater Camera; (c) Robot Accessories. Intercontinental Marketing.

15. BOOKLET: Omega 120; data description; Simmon Bros.

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24. CATALOG: 40 pp., illus. Auricon Cameras. Berndt-Bach.

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26. BOOKLET: How To Take Better Sports Films. 24 pp., illus. Paillard Products.

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FLASH EQUIPMENT

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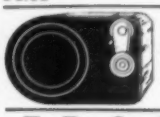

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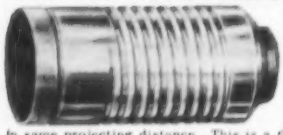

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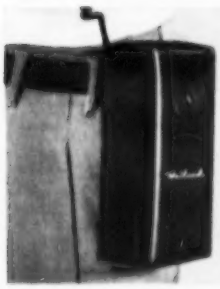

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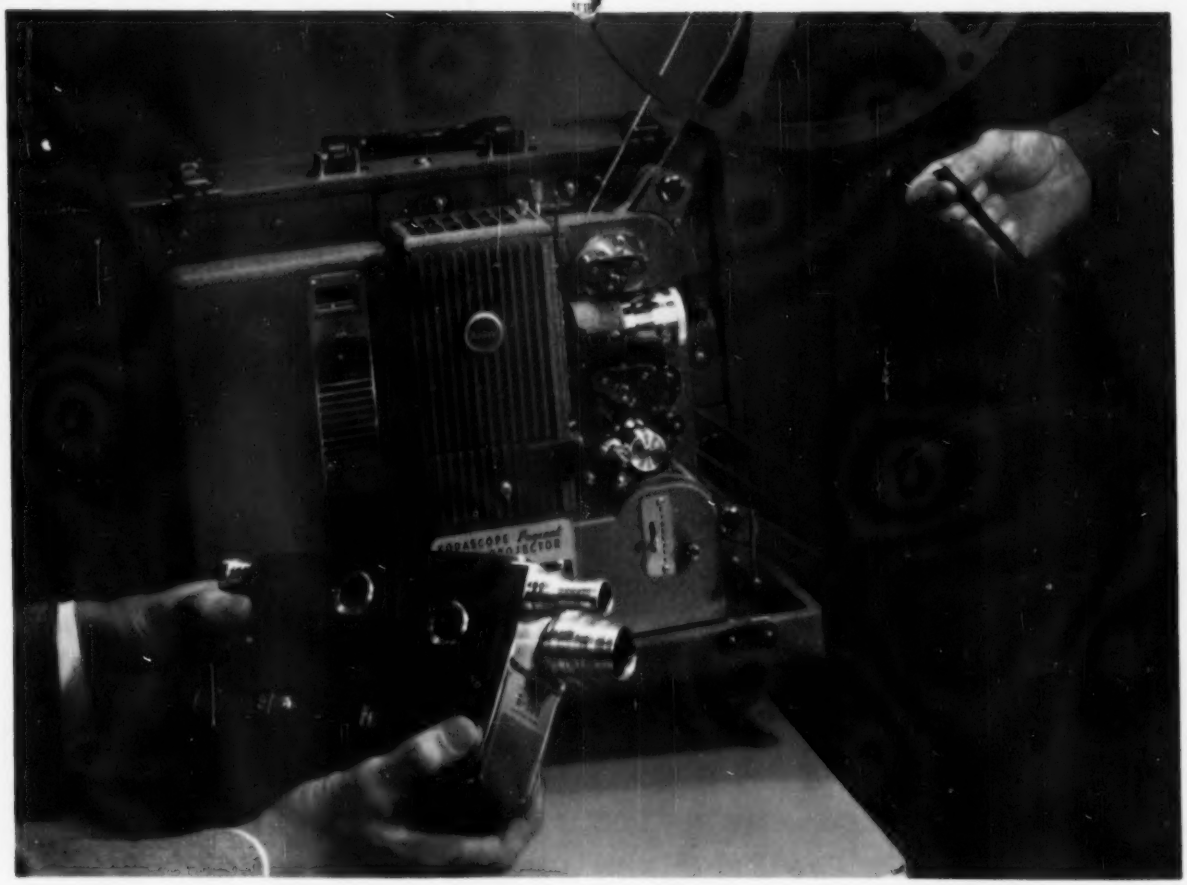

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